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Motor-World

3104













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**MOTOR WORLD**

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*Meyer Burma*

# MOTOR WORLD

**DEALERS, JOBBERS AND GARAGEMEN**

Volume LVI  
No. 1

PUBLISHED WEEKLY

NEW YORK, JULY 3, 1918

Ten cents a copy  
Two dollars a year

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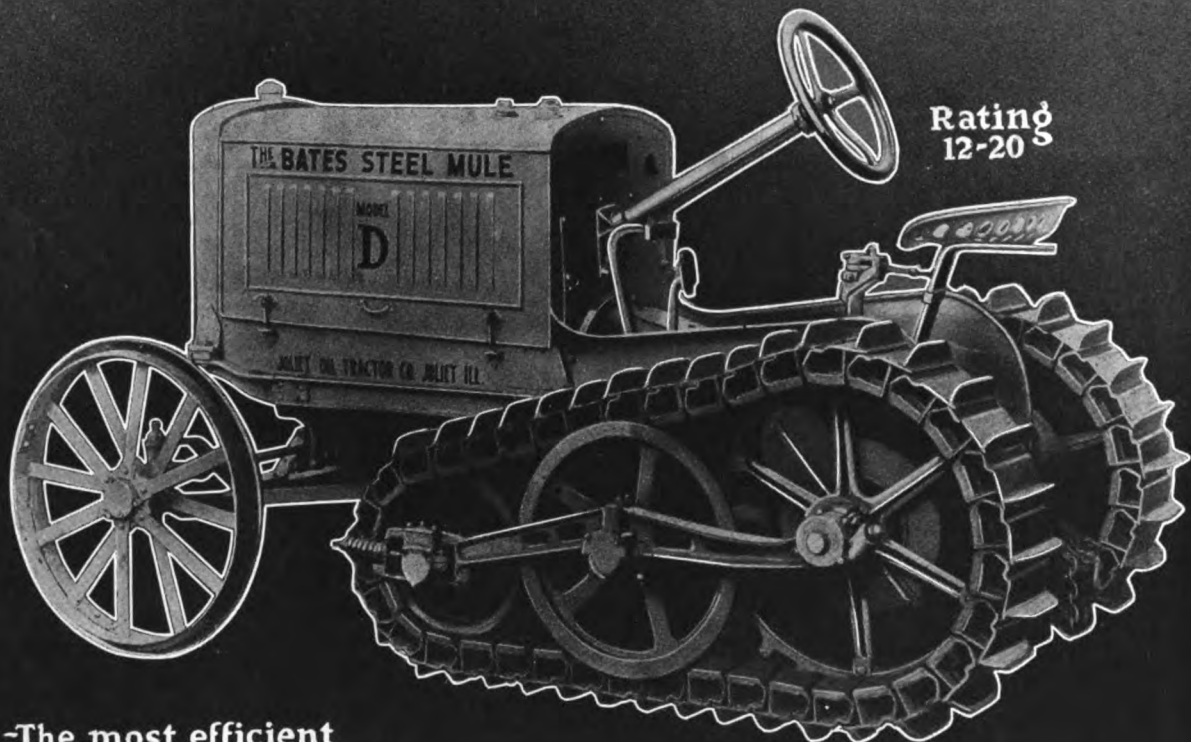
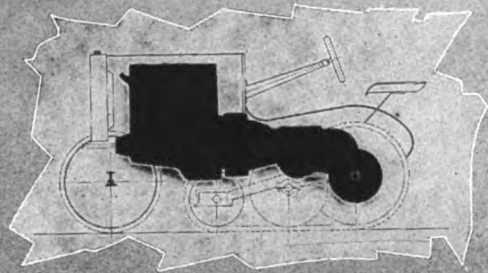
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# MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

PUBLISHED EVERY WEDNESDAY BY

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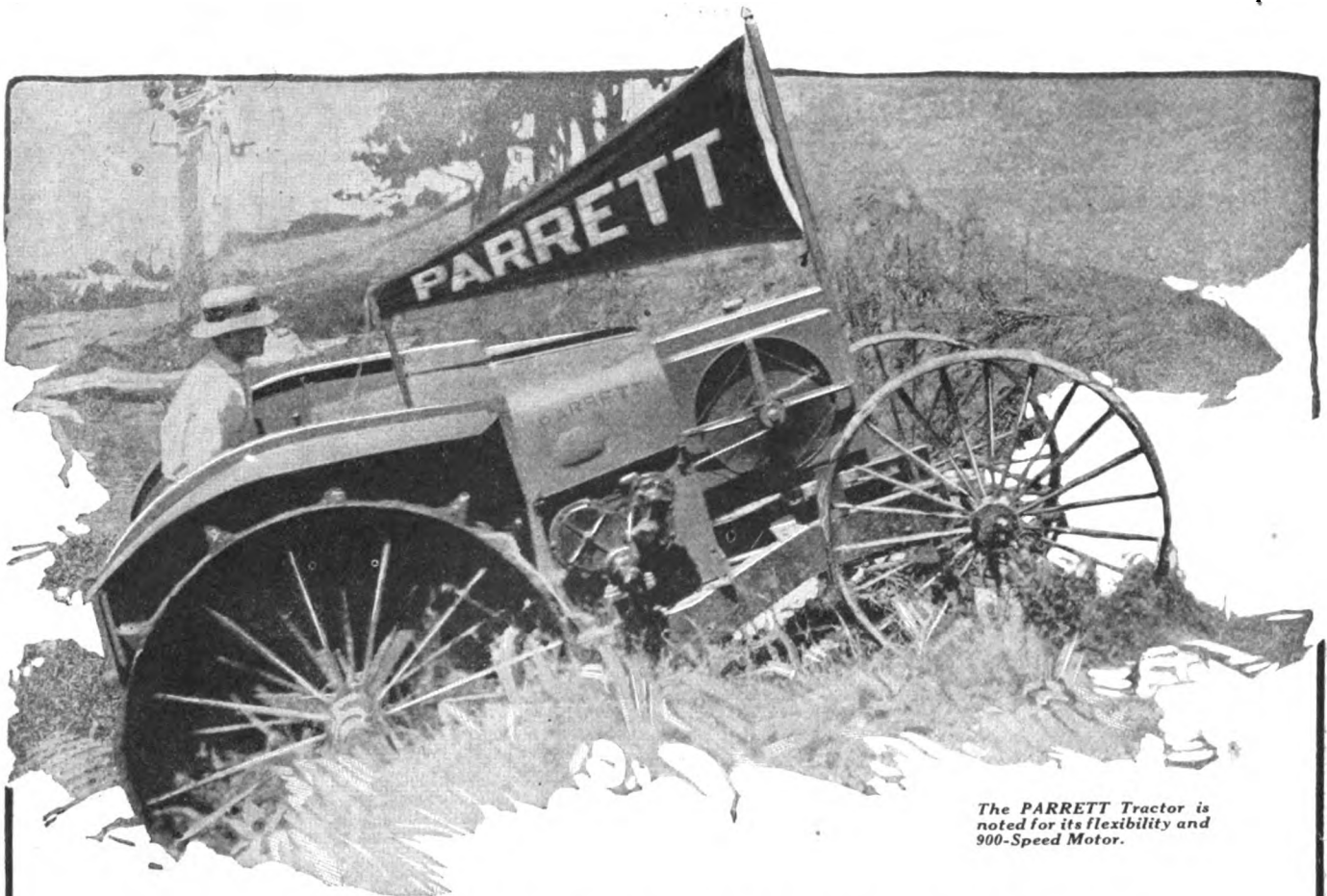
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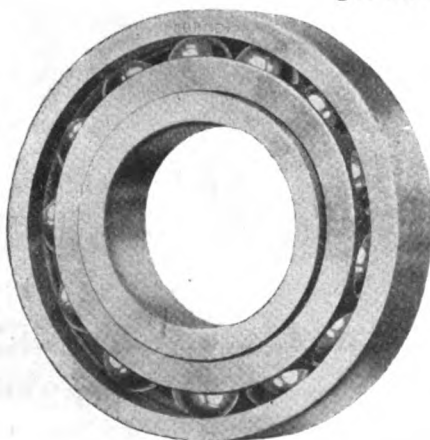
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# GURNEY

## BALL BEARINGS

# MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

Vol. LVI

New York, U. S. A., Wednesday, July 3, 1918

No. 1

## New York Joins N. A. D. A.

*Dealers of America's Biggest City, and Many from Surrounding Cities, Add Support to National Organization Movement*

### CAMPAIGN MOVES RAPIDLY

**Pittsburgh Joins with 208—Harrisburg Enters with 40—Other Big Cities Plan Rousing Trade Meetings to Carry on the Work**

**T**HE 5000-in-90-days membership campaign of the National Automobile Dealers' Association is moving rapidly. The headquarters of the organization, at 3550 Lindell Boulevard, St. Louis, is flooded with applications from centers which want President F. W. A. Vesper and Executive Secretary E. E. Peake to stage meetings. These are being scheduled as rapidly as possible.

Memberships are being received, and there are advices from many places that quantities of memberships have been secured, but are being held for a few days in an effort to make the membership 100 per cent.

Monday noon the dealers of New York, Brooklyn, the Bronx, Yonkers, Long Island, the lower Hudson Valley and part of the Connecticut, met at Reisenweber's, New York, and gave Vesper and Peake an enthusiastic welcome.

The addresses had to do with the recent appearance before the Ways and Means Committee of the House of

Representatives of Vesper and Peake and the N. A. D. A. committee.

At this meeting practically the whole New York and vicinity trade joined. The association went in as a body.

Thursday night, Peake, assisted by Fred H. Caley of the Cleveland association, held a meeting in Pittsburgh. After the story of the N. A. D. A. had been told, all Pittsburgh, and much of the surrounding territory joined—208—all who were at the meeting.

Friday evening Harrisburg held a meeting, at which all the 40 dealers present joined.

At the Pittsburgh meeting, P. C. Bauschard, president of the Erie association said his town already had 40 members and wanted to get 100 or 150 before sending in the report.

Lincoln, Neb., has wired headquarters that its dealers have gone in 100 per cent, and that the report will be forwarded at once.

Chicago has placed a chairman in every county in its distributing terri-

tory, and expects to turn in one of the biggest membership lists in the whole campaign.

Cleveland has secured a considerable number already, but is planning to have a big membership throughout the Ohio territory by the time its big meeting is held, July 9, at noon, at the Winton Hotel.

Indianapolis has a State-wide meeting listed for July 10, at which E. W. Steinhart says 500 members are expected.

Worcester, Mass., has a committee to handle N. A. D. A. matters.

St. Louis, Vesper's home town, is going to pay him a 100 per cent tribute, and has it nearly ready to hand him.

The Minneapolis distributors, states Frederick E. Murphy, have named a committee of ten members to handle the campaign in the Great Northwest. Local meetings are being held throughout the territory, the N. A. D. A. idea is being explained, and the wind-up is to be a trade mass meeting in Minneapolis, July 12.



# Meetings in the Campaign of the National Automobile Dealers Association

GIVE US YOUR DATE FOR LISTING HERE

To arrange schedule correspond with association headquarters  
at 3550 Lindell Boulevard, St. Louis

July 9.....Cleveland—Northern Ohio dealers  
July 10.....Indianapolis—All Indiana dealers  
July 12.....Minneapolis—Northwestern dealers  
Week of July 15.....Des Moines, Cedar Rapids, Fort Dodge and possibly Omaha  
Week of July 22.....Newark, N. J.—Northern New Jersey dealers

## MEETINGS ALREADY HELD

June 27.....Pittsburgh, 208 members joined  
June 28.....Harrisburg, 40 dealers joined  
July 1.....New York, 25 dealers joined  
July 2.....Philadelphia

Cincinnati, writes Ralph L. Curl, has gone 100 per cent into the N. A. D. A.

L. M. Shaw, Youngstown, Ohio, secretary, says the N. A. D. A. idea is receiving the support of the dealers there.

W. H. Imes, president of the Automobile Trades Association of Kansas, says the N. A. D. A. conservation program is being received and adopted with enthusiasm and that the city and country dealers are likely to go into the N. A. D. A. to the last man.

### More 100 Per Centers

President W. M. Smith says Dubuque, Iowa, has joined every one of its dealers.

Nashville is getting ready to join the movement.

J. E. Finney, Richmond, Va., notified headquarters that the N. A. D. A. was receiving the support of the dealers, and that on the conservation program the only companies declining to come in were branches of national corporations. The N. A. D. A. at once took these matters up with the headquarters offices of these corporations, and expects to straighten things out, as it has done in several instances.

It has been found that companies

doing a national business are glad to direct their local branches to co-operate with the local dealers, once the matter is properly taken up by the N. A. D. A. One tire company stated that any of its agencies that declined to co-operate with the N. A. D. A. in its War Service program will be summarily cut off the list.

Kansas City, the home town of Executive Secretary Peake, has gone into the campaign with a vengeance. Committees have been named throughout the Kansas City distributing territory and the memberships are coming in in volume.

In quite a number of the distributing centers the distributors are securing memberships from their dealers as these men come in to transact business.

### State Circuits

While the campaign is only a few days old, several state circuits are in embryo. One for the Iowa cities is in process of making. A series of meetings will be held in Ohio, and in addition to the large meetings already held in the East, several more are planned.

Newark, N. J., will have a meeting in about two weeks. Boston expects one at the same time, and as part of

this series there may be several in various New York state cities.

President Vesper and Executive Secretary Peake urge dealers everywhere to name local committees to handle the work. This committee should then call a local meeting and secure the membership of the distributors.

There should then be appointed a committee in every county in the territory, which committee should secure in its section memberships in the N. A. D. A..

### Pass 'Em On

These memberships should be passed in to the central committee of distributors and sent to the N. A. D. A. headquarters at 3550 Lindell boulevard, St. Louis.

Each application should be accompanied by a check for \$15—\$5 for membership and \$10 annual dues. Car dealers are the eligibles.

The campaign will be short: 5000 members—and more—are wanted to back up President Vesper and the directors and make sure the work they have started goes on. The essential is quick and energetic action.

THIS IS THE BIGGEST BUSINESS BEFORE THE AUTOMOTIVE TRADE OF AMERICA TO-DAY.

# Vesper Pleads Dealers' Case Before Congress

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Tells Ways and Means Committee tax should be levied on all cars and not on car sales alone—Congressmen favorably impressed with statements of National Dealers' Association Committee.

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WASHINGTON, D. C., June 27—Congress has a more favorable opinion of America's motor car dealers to-day than it had yesterday morning, due to the appearance before the Ways and Means Committee of the House of Representatives of President F. W. A. Vesper and the Special Tax Committee of the National Automobile Dealers' Association.

Instead of making a fight against any revenue measures the dealers said they were willing to do anything they could to help win the war and believed trade would be least disturbed and a maximum of revenue could be raised if a tax were levied on all cars instead of on car sales alone.

The dealers did not oppose the tax on new car sales. They asserted that they could stand the present tax all right, but that it would disturb and throttle trade if this tax were disproportionately increased. Vesper suggested a tax on America's 5,000,000 cars as follows:

Value	Tax
Up to \$600 .....	\$5
\$600 to \$1,100 .....	10
\$1,100 to \$2,000 .....	15
\$2,000 to \$3,000 .....	20
\$3,000 and up .....	25

He asserted that the dealers are a patriotic body of men, anxious and willing to do anything the Government desires and needs, and pointed out that they must be allowed to stay in business profitably if they are to continue to provide mechanics for the army, funds for Liberty Bonds and for other war activities.

More than 15,000 automobile dealers, he said, deal mainly with rural trade and have aided importantly the development of the farm through automobile sales to farmers. The peculiar structure of the automobile dealer establishments caused by the various laws and the commodity itself was explained in detail to the committee to show that these buildings could not be used for other businesses and that any tax severely curtailing the automobile business would create great financial loss and a vast number of business difficulties.

Vesper pointed out particularly well the utility of

the passenger car, describing at length the various important utilitarian uses, including statements showing that doctors, contractors, farmers and many industries are importantly aided by the passenger car. *He showed that the farmers are now keeping their sons on the farms through the use of cars.*

Following the presentation the Congressmen questioned Vesper and were particularly interested in his suggestion of a wheel tax on owners, which he said would produce \$65,000,000 a year as compared with \$30,000,000 produced by the 3 per cent gross sales tax, which he advocated should also be maintained.

Congressman Longworth inquired if there would be any objection to an increase of the 3 per cent tax. Vesper said that an increase to 10 or 15 per cent, as has been forecast by newspapers, would certainly work great harm and put many dealers out of business, but the dealers had no objection to a slight increase *if it was found necessary*. The discussion developed the fact that in most instances the tax is passed on to the consumer, while in some cases the dealers are absorbing it.

Congressmen said that there are four possible plans of taxing automobiles under consideration: *A tax on oil and gasoline used in automobiles solely for pleasure purposes, a tax on chauffeurs, a tax on the gross sales, and a tax on car owners.*

Vesper was asked what he thought of the tax on gasoline and oil and he proclaimed it impracticable, stating that it would be impossible definitely to keep track of the amounts used solely for pleasure. The Congressmen were in accord with his statement. One Congressman suggested that it might be necessary to use all four methods of taxation.

Some objection was made to the tax on car owners because this would allow a tax on all personal property by the Government. *Vesper suggested that the tax be an annual licensing plan rather than a direct tax and be collected at the same time that the states collected their wheel tax. This found approval.*

The question of used cars and their value for taxation was brought up by a Congressman who declared that they would be appraised at too low a value.



*Vesper answered that there is a well regulated scale of prices for used cars which could be used to estimate their value for taxation purposes.*

Congressman Longworth inquired what profit Vesper made as the Buick dealer and was told 20 per cent. He remarked that with this amount of profit the 3 per cent gross sales tax could scarcely have a serious effect.

The Congressmen were generally well impressed by Vesper's statements and seemed particularly interested in his plan for a tax.

Vesper's presentation did much to place concretely the dealer viewpoint before the Ways and Means Committee, which listened with interest and much attention to the suggestions and remarks coming from an organization of dealers.

## Vesper's Statement to the Ways and Means Committee

IN appearing before you as representative of the automobile dealers of the United States, our desire is first to make plain the fact that we do not oppose any equitable tax on the automobile business where it is considered necessary to raise revenue or where it is for the purpose of having the industry bear its proper proportion of the expense of conducting the war. It is rather our desire to place before you what seems to us as an injustice, due to the mistaken classification under which the automobile has apparently been placed, because its proper place in our national affairs has not been fully understood.

That the automobile has been one of the world's largest factors of development is apparent by the multitude of uses to which the car is being put, all of which, when taken into account, clearly demonstrates the designation "pleasure car" a misnomer.

### 80 Per Cent Business Cars

Of all the cars built and sold, less than 20 per cent can properly be called purely recreation vehicles and, while in this classification might appear such types of cars as speedsters, broughams, town cars, etc., yet even these are used in a great measure not for recreation purposes only, but as in the instance of the closed car or town car, usually as the family vehicle. Therefore they come in for a share of utilitarian service.

It is safe to say that the larger proportion of the balance of passenger cars are combination cars which are being used in actual business pursuits part of the time and the balance of the time possibly the same as the spring-wagon and the surrey of olden days for recreation purposes on Sundays and evenings.

A careful canvass of almost any locality will show that comparatively few automobiles of the latter type are being used exclusively for recreation purposes and that in the combination the actual service usage predominates. Nearly half of the moderate priced cars are sold in what is known as the rural districts, and a large proportion direct to the farmer himself, who utilizes the car not as a recreation vehicle but one for actual service purposes. It is a fact easily demonstrated in rural districts that the automobile is responsible for the increased efficiency of the farmer and the increase in his production due to the fact that it has been a time saver for him. Before the advent of the automobile a trip to town meant a loss of practically the entire day, whereas by the use of the

automobile it has been shown that the greatest number of trips made to town are usually after working hours, in the evening or at odd times.

Not only this, but the farmer's ownership of an automobile has increased the trading radius of practically every town and village in the country and has been the factor in increasing the business of the merchants of these towns because of the fact that the farmer visits his market oftener. Before the automobile was generally used one living ten or more miles from his market required practically the entire day to make the round trip with his team. During market times with an automobile a farmer can make his market trips every day without the loss of time.

This one fact alone would disprove the seemingly accepted idea that an automobile is a non-essential and as such is unnecessary in the plan of things at this time.

*The unnecessary use of an automobile and the one used strictly for recreation purposes can be determined by proper investigation, and necessary regulation can be made to correct and reduce this use to a minimum. The automobile dealers throughout the United States will be more than willing to co-operate in this direction to the fullest extent.*

The automobile business has become an industry so large in its proportions that it has built up around itself an organization of distribution probably second to no other industry in the country. Its sale and handling is similar to no other industry and it has had to develop a peculiar organization of its own which in this country is made up of over 28,000 establishments devoted to the sale and distribution of automobiles. Of this number possibly 2500 or 3000 are located in what is known as automobile distributing centers, the dealers in which either sell cars to the residents of large cities or in addition thereto have jurisdiction over the distribution of the cars in a large territory tributary.

### The Small-City Dealer

In addition to this there are approximately 25,000 dealers located in the smaller cities, whose business is almost entirely made up of the sale of cars in their surrounding neighborhood, the largest proportion of which goes into the rural and urban districts adjacent to them.

*These dealers have, owing to the peculiar requirements of the business, built or had built for them buildings to meet their requirements, and, as a result*

*would, if unable to continue the sale of automobiles, be placed in a position where they would be unable to utilize these properties without very expensive re-arrangement.*

*A majority of these dealers, possibly 85 per cent, do not own the buildings but occupy them under lease, and in the building of them—a greater proportion being built to the dealers' specifications—loans have been contracted, the payment of which depends upon the returns received. A serious disturbance of the business would endanger the safety of the investment.*

*Besides this nearly if not all of these buildings are built under special restrictions prescribed by law on account of the peculiar hazard of the business, which, by its own observance, renders them unfit for any other line of business.*

It is a significant fact that there is no line of merchandise that will replace automobiles in the hands of a dealer. There is nothing now manufactured that can be taken into an automobile dealer's organization to be handled and sold by the same equipment; consequently it would mean practically the entire disorganization of the establishments of a large number of the 25,000 of what might be termed "small town dealers."

### Can't Change Business

There is no other business, we believe, where special equipment for the handling of sales and distribution is so necessary, nor is there any other business where some satisfactory addition or substitute cannot be taken on when the prime business itself is not curtailed, nor is there any other business where its special sales organization cannot quickly be utilized in the handling of other merchandise.

Conservatively figuring, eight people dependent on a dealer's establishment gives approximately 200,000 people who are directly affected. Add to this a conservative estimate of 20 in the large city distributing organizations would make 50,000 more. This applies purely to the dealer or sales organizations and does not take into consideration something like 25,000 additional strictly garage owners, who are not actually sellers or handlers of automobiles but are established for the purpose of maintenance, care, etc., nor does it take into consideration the strictly accessory dealer who is neither a garageman nor a seller of automobiles, but who maintains an establishment for the purpose of selling and distributing automobile supplies of various sorts.

*Therefore, an actual hardship would develop to the exclusive automobile dealer whose place of business has been built for the purpose and whose entire investment is represented in a building and organization constructed for the purpose of handling automobiles and which is, in most cases, not practical for any other line of business without a large expenditure for re-arrangement.*

A substantial decrease in the efficiency and production of our farms is sure to result if the farmer cannot supply himself with an automobile if he requires it, not only because of the use the automobile has been in itself from an actual service standpoint but because it has been one of the greatest factors for keeping the boy on the farm that has ever developed. Careful investigation of any rural district will readily demonstrate the fact that where an automobile is owned by a farmer, his children are remaining with him longer, due to the fact that by its use they are enabled to enjoy some of the conveniences, the lack of which have in the past driven them to the cities.

While this use of the car by the young people of the family of the farmer for trips to town and otherwise might easily be construed as a recreation feature, the fact yet remains that it has resulted in actual conservation of man power on the farm. Besides this there is no question but what the efficiency of the farmer has been increased because in his use of the car a certain recreation has been given him which cannot help but have been beneficial to him mentally and physically.

#### Farmers Own 2,000,000 Cars

Nearly two million of the automobiles now in use are owned by farmers. A careful investigation in any rural district will indicate that the largest proportion of these cars are a necessary part of a farmer's equipment, and in sparsely populated sections it is as much or even more necessary to a farmer.

As an evidence of this fact, the registration records show that the strictly agricultural states have the largest per capita ownership of automobiles. Iowa and Nebraska have one car to every eight people; South Dakota, one car for every ten people; Montana, on account of its distances, one car to every eleven people; Kansas, North Dakota, Minnesota and California, one car for every twelve people; Arizona, also on account of its distances, one car to thirteen people; Michigan, one car to every fourteen people; Indiana, Wisconsin, Colorado, Ohio and Wyoming, one car to every fifteen people. This evidence of car ownership increases gradually through the balance of the principal farming states at about the same ratio.

It will be noted in the states mentioned above that there are practically no large cities, with the possible exception of California, Ohio and Michigan. These figures, which are as of June 30, 1917, are clear evidence of the fact that the motor car is used more extensively for rural utilitarian purposes than for so-called recreation purposes in large cities.

When the figures are available as of June 30, 1918, the proportion may change slightly, but if so, it is safe to assume that the change will be an increase in the farming states rather than the others. For your further information a complete list of cars registered, dealers by states, etc., I attach hereto a statement prepared by *Automotive Industries* giving the figures in detail.

From the service point of view in cities naturally comes the car used for business purposes during business hours, under which classification come cars used for light delivery, by physicians, salesmen, solicitors and dozens of others. Therefore from an actual transportation standpoint it represents a tremendous usage from those citizens who live in suburban districts now so located that in many cases their only means of transportation is the automobile.

The effect that the motor car has had on the expansion of cities is at once apparent to everyone because, without the motor car, many of these extensions would not have been possible. The increase of values of suburban properties is therefore almost due entirely to motor car transportation. This also is responsible for the increase of farm values due to the fact that distance from the market or city is not now the factor that it was before the motor car was so universally used.

Take the evidence for instance of any practicing physician, especially the general practitioner in the moderate sized cities or country. In his work alone the use of motor cars has increased his efficiency many times over, because of his ability to increase his zone of usefulness and in rural districts particularly the doctor has been able to render quicker aid to hundreds of more cases than he was able to do in the days when he was obliged to serve them in the old way with a team.

While I do not have the exact figures, yet I have been informed that there are nearly 150,000 doctors in the United States and it is safe to assume that 95 per cent of them are owners and users of motor cars in actual service. This is only one of many of the strictly utilitarian uses to which an automobile is put, but it illustrates in no small way the feature of the automobile industry which is not generally taken into account.

#### Dealers Want to Help

As stated in the beginning, the automobile dealer does not object to the levy of an equitable tax for the purpose of raising revenue for the conduct of the war but believes that any tax so levied that will stop or greatly curtail the manufacture and sale of automobiles will not only be unwise but unwarranted from the standpoint of the nation's efficiency, and that any tax levy that will tend to handicap the prospective purchaser in buying an automobile or one that will undermine the establishment of the dealer is not justified.

*We believe that no patriotic dealer will object to paying any tax that is not out of proportion with other lines of business, nor that any owner of an automobile will*

*object to paying a federal tax upon his car if it is levied as a war measure.*

Merely as a basis for calculation in order to arrive at a possible revenue from a federal or wheel tax standpoint, the following schedule is presented as one which the dealers believe will be an equitable one and will meet with no serious objection from any patriotic owner of a car. Take for instance a tax of \$5 on a car selling for \$600 or less; \$10 on a car selling for up to \$1,100; \$15 on a car selling for up to \$2,000; \$20 on a car selling for up to \$3,000; and \$25 for a car selling for over \$3,000.

This would net an average of approximately \$13 per automobile per year, if figured on the average of the first four classes, as those greatly predominate in numbers. Multiply this by approximately five million, which is the figure given as the number of automobiles now in use in the United States, and it will net \$65,000,000. Add to this the cars to be produced during the coming season and the amount will of course increase in that proportion.

This tax can easily be collected, as automobiles are registered by states and by cities and in many cases counties, and this amount of tax can easily be collected at the time the state licenses are made returnable and will therefore not seem to present any very great expense or any great difficulty of manipulation. *A tax of this sort will not represent a hardship either upon the present owner of a car or a prospective purchaser.*

#### Trade's Labor Problems

Causes already in force have had a tremendous effect upon the automobile dealer's business, and one of the greatest has been the scarcity of labor, especially the expert necessary in the repairing and maintenance of motor cars. Yet in spite of this fact the National Automobile Dealers' Association has been vigorously carrying on a campaign for some months which has been highly successful and has been extending as rapidly as possible curtailment in operation in every department where skilled labor is used, for the purpose of making available for the war objects mechanical help of all classes. It is estimated that through its efforts at least one man per organization has been released to date, which means that by its own efforts upwards of 25,000 skilled drivers and mechanics have become available for army purposes or for work in plants where such help is necessary.

A general closing of garages and service stations on Sundays, holidays and at night will release a large number of mechanics but it will also reduce the earnings of the dealer who depends partly upon this branch of his business for his income. *All of this has been done willingly and voluntarily upon the suggestions made by a committee of dealers themselves, after carefully investigating the dealers' business in an effort to determine what they could do to help the conservation program as originally outlined by the economy division of the War Industries Board.*

Steps have been taken that will extend



this work to all garages, accessory houses, oil stations, and in fact to every branch of the automobile business on the theory that such voluntary curtailment is a war measure which will represent a saving of man power and material.

*Therefore, within a short time, the automobile dealer industry will be upon a strictly war basis, fully as rigid if not more so than that of any other industry, which evidences the fact that the automobile dealer is willing to do cheerfully anything that he can to help the cause.*

Owing to the conditions confronting the factories whose product we sell and distribute, because of scarcity of labor, difficulty of transportation, advance of prices and other factors of this sort, not the least of which is the fact that the automobile factories generally are doing a large proportion of war work, production has already automatically been greatly reduced. *Therefore, any additional burden in the shape of taxation that will further curtail the manufacture of automobiles will place a tremendous hardship upon the automobile dealer. Especially is this true when the difficulty of delivery is considered.*

During the past winter and spring and

continuing up to the present time nearly half of the cars manufactured have been delivered to the various dealers and selling organizations upon their own power, thus relinquishing freight equipment entirely, this even to the extent of upward of 1200 miles from the factory. Many driving deliveries were made as far away from the factories as Texas, most of the shipping done being to those dealers at points beyond the possibility of self-delivery. As a further factor for the relief of transportation, automobile dealers generally favor and are heartily supporting the rural express and return loads movement and will probably be the biggest factors in its ultimate success, because with the establishments maintained in towns and villages through which these express lines pass the trucks in use for this purpose are assured of necessary mechanical attention wherever and whenever required.

In presenting the situation from the automobile dealers' standpoint, no attempt has been made to take into consideration and to cover the problem confronting the manufacturer himself, nor the disturbance that it will cause manufacturing organizations if a tax that will tend

to curtail the manufacture and sale of passenger automobiles should be advocated, but is considered purely from the standpoint of the dealer, who by the very nature of his organization is dependent absolutely upon the sale of a reasonable number of automobiles per year to properly maintain his establishment and to keep himself and his family.

*Therefore, in considering the matter of an automobile tax, it is hoped that the dealer's standpoint will be carefully considered and that no measure be advocated that will tend to handicap his business so that he cannot continue to operate; also that due consideration will be given the fact that when he loses his source of revenue and livelihood, his ability to hold up his end in the purchase of bonds, donations to the many worthy causes that exist and his many other activities in this direction will be impossible; AND ALSO THAT AS A CLASS THERE IS NO BIGGER, BROADER AND MORE PATRIOTIC GROUP OF BUSINESS MEN IN THE COUNTRY NOR ONE WHO WILL MORE CHEERFULLY HELP THE GOVERNMENT IN EVERY POSSIBLE EMERGENCY THAN THE AUTOMOBILE DEALER.*

## Essential Qualifications for Tractor Dealers

### *Study of Buyers' Requirements, Readiness to Give Service and Adaptability to Changing Conditions Prime Requisites*

THE foreshortened perspective which many dealers get on the tractor business was illustrated the other day when a dealer in Pennsylvania wrote to one of the leading tractor companies requesting a catalog and saying he was seriously considering taking on that particular tractor as a side line.

The catalog was sent, as a matter of course, but it was accompanied by a letter which told the dealer rather plainly and forcibly that a tractor was NOT something to play with, but was something upon which to build a real business.

In mentioning this incident the sales manager of the tractor company said it was too truly typical of the attitude of many dealers. Some of them are of the old school, conservative type that is not receptive to new ideas and cannot see that a new order of things is at hand.

Some others are not so closely bound by habit and tradition but have not as yet grasped the significance of what the power idea in agriculture means. They are hesitant about committing themselves; they want to go into the tractor business only in a tentative and experimental sort of way and not to take it seriously until convinced that they should do so.

Upon the other hand there are men who are keenly alive to the sort of revolution which is under way, and they realize more or less clearly what it means and where it will lead. These men have adopted the tractor enthusiastically, more as the exponent of an idea than as being satisfied with such machines as are now on the market. They realize that perfection cannot be realized in a day, but that it can come only after pioneer and toilsome experience. These men have undertaken the hard task of popularizing the idea of power farming and of forcing the development of correctly designed and competent machines, as based upon the results of real field experience.

#### New Type of Dealer

From these dealers and from others who, inspired by their example and success will join them, the future distributing organization for tractors and power farm operative equipment will be composed.

These men will constitute a new type, distinct from the old-fashioned dealer whose horizon was no wider than the limitations of horse-drawn equipment permitted, who will have no traditions of the past to hamper them but

who are awake to the boundless opportunities which lie before them in the power farming field.

These men will combine mechanical ability, which contemplates both the tractor and the equipment which goes with it, with aggressive and competent salesmanship. *Already there is a nucleus of such dealers leaving the trade, and the number constantly is increasing.*

**THESE MEN WILL BE THE AUTOMOTIVE DEALERS.**

Recognizing in motorized equipment the most effective and economical means for the attainment of desired ends, these men will devote to its development and employment a singleness of purpose and a competency of equipment, material and mental, which will give ever increasing momentum to the power farming idea. That there should be a development of this new type of dealer is inevitable because of the very radical nature of the change now in process. The equipment for service, the ability to render service and a ready adaptability to the new conditions are prime requisites for the new kind of dealer. It is therefore significant and important that these qualifications are found most numerous among the men who already have made a notable success in the automobile business.

# HORSES *and* TRACTORS

## *Can't Be Compared*

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Their costs are different, the results are different and any attempt at cost-sales arguments is a step in the wrong direction. New ideas are needed.

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GETTING right down to the root of the matter there is no point of view from which the work of a tractor and the work of horses can be compared legitimately. The two are fundamentally different and few if any factors are common to both. Yet one of the commonest things one meets in current tractor literature is an attempt to compare the two from the viewpoint of relative cost to the farmer. *This is neither legitimate nor fair.* The attempt to make such a comparison always is preceded by the introduction of a fallacy which, as soon as it is pointed out, destroys utterly the force of the argument. Worse, it gives rise to errors of belief on the part of the farmer which are harmful to the tractor business because they lead to disappointment.

### Dollar-and-Cent Arguments

Because the tractor is designed to do certain of the work on the farm which hitherto always has been done by horses it is natural, perhaps, that an attempt should be made to compare the two sources of farm power upon a basis of relative cost. Indeed, it seemed necessary so to do in order to convince the farmer that he ought, as an economic necessity, substitute the tractor for the horse in his operations.

This was based upon the assumption that the argument which would appeal to the farmer with most force was the economic one. His known inclination to listen more intently to dollar-and-cent reasons than to any other kind accounts for the degree of dependence which tractor manufacturers and tractor salesmen have placed upon an argument in this

form. Yet to give such an argument even an apparent form of logical value it must be based upon two kinds of cost data, hardly an item of which is common to both tractor and horse and which therefore cannot be legitimately compared.

### Results Are Erroneous

This will be clear upon a brief consideration of the matter. Such consideration is the more important, too, since the dealer who will sell tractors should understand clearly the distinction between the two kinds of costs, have a clear conception of the differing body of facts upon which they are based, and why it is that as they are commonly compared the result can be nothing but erroneous and misleading.

Take first the case of the tractor. The items which make up the cost of maintenance and operation of a tractor are, for the most part, definite and exact. There can be no question, for instance, about the first cost of a tractor. This may be \$750, or \$1,000 or \$1,500, or any other sum, but in every case it is a definite amount which the farmer must pay.

The prevalent rate of interest which the farmer must pay at the bank in his locality in case he borrows money will be then the rate of interest which he must charge against his investment in a tractor. This always is ascertainable with ease.

### Depreciation Varies

The rate of annual depreciation which the farmer must charge is not so easily determined. It must be admitted that during the past this has been unreasonably high, in some cases being as much as 33 1/3 per cent. As tractors are built now, however, it may be assumed that under average conditions the life of a machine will be at least five years, reducing the depreciation percentage to 20 per cent, or in some cases ten years, which would reduce the percentage to 10 per cent.

As no two tractors will do the same amount or kind of work, receive the same degree of care and attention, nor be

handled just the same, the rate of depreciation will vary in each individual case and only an approximate average will be legitimate. The actual rate never can be ascertained with accuracy in advance. Possibly a rate of from 10 per cent to 12 1/2 per cent on the average would be fair in most cases.

Insurance always can be determined accurately. But the annual charge which must be made for repairs is another factor which is indeterminate in advance since its size will depend upon the amount and character of work the tractor is called upon to perform, the sort of care it receives and other lesser factors. This is, too, supposing that the tractor in question has been built with due regard to quality in workmanship and material.

### Easy to Keep Tractor Costs

The cost of operation of a tractor never can be estimated with any great degree of accuracy in advance. At the end of a season, however, it is a mere matter of simple arithmetic to compute the cost of the fuel, oil, grease and other materials consumed. Also the wage of the operator can be determined with reasonable precision at the end of a year's work. The number of days the tractor has been at work, multiplied by the daily wage of the man who operated it, will give the total for the year. In a case where it is operated by the farmer himself, or by a member of his immediate family, the daily rate of wage to be charged against the tractor will be at least equal to the prevalent daily wage of a good hired man, at work either upon the tractor owner's farm or upon some neighboring farm.

Thus, at any rate, at the end of the first year of tractor experience, it is possible for the farmer to total the principal items of cost—interest on investment, cost of insurance, repair cost, cost of fuel and oil, amount of operative wages and incidentals, leaving only the annual rate of depreciation as the one indeterminate factor.

While it is manifestly impossible for the dealer or the farmer to tell with

absolute accuracy in advance what most of these factors will be, yet it is possible to approximate them with a reasonable degree of accuracy, this for the reason that most tractors of standard make and established reputation have been in continuous use now for a number of years and the approximate cost of their maintenance and operation is fairly well known.

The data relative to this are in the hands of tractor manufacturers, agricultural experiment stations and of the United States Department of Agriculture, all of whom have made more or less complete investigations of the matter. The results of these investigations are at the service of the dealer upon request if he cares to know, and he should care to know if he is to put himself in a position to advise his customer wisely. Thus it is possible for him to ascertain approximately what any tractor of given capacity and original cost will stand the farmer for maintenance and operation. At any rate he can get near enough to the probable facts for all practical purposes.

#### Relative Cost of Horse and Tractor

Now it has been the custom for the tractor manufacturer to compare with this reasonably approximate and determinable cost of tractor maintenance and operation an estimate of the cost of maintenance and operation of an equivalent power in horses. For this purpose it has been commonly the custom to estimate the cost of the horse equipment on the basis of the prevalent market price for a good farm horse, figure investment and depreciation upon such market value, include the necessary incidentals of shoeing, veterinary service and the like and add to the total the market value of the food consumed by the horse. The final result, multiplied by a sufficient number of horses to equal

the power of the tractor, was asserted to be the relative cost of horse equipment as compared with the cost of tractor equipment as a source of farm power.

This looks reasonable on the face of it, but it contains a fallacious bit of reasoning which destroys the force of the argument as soon as it is pointed out. In every instant the items of cost charged up against the horse are based upon open market values—what horses, feed and so forth are worth if the farmer had to buy both horses and feed, as he has to buy tractor and fuel.

*But ordinarily the farmer buys neither horses nor feed—he raises both. This makes a vast difference.* The difference is so wide and fundamental that it is illegitimate to compare what the farmer must pay in the market for his tractor and fuel and what it costs him upon his own farm to produce horse and feed.

In this respect the farmer is far more logical than is the manufacturer. The farmer never figures the cost of his horses upon the basis of what it would cost to replace them in the open market, but upon what it would cost to grow them upon the farm. Yet the manufacturer insists that he ought to figure the other way round, and bases his comparison of relative costs on market values instead of farm values. See the change of base?

Furthermore, in figuring for the farmer what it costs him to maintain and operate his horse equipment for farm power it is not fair to figure interest and depreciation upon an investment based upon what it would cost the farmer to replace that equipment in the open market. The probabilities are that in a vast majority of cases the farmer has not bought his horse equipment in the open market, but has bred it. He has raised his horses from the stage of colts. Therefore, his investment in them is just what they have cost him to raise, no

more. Neither is there a depreciation charge on a horse comparable with that which must be charged against a piece of mechanical equipment. A horse actually appreciates in value up to a certain point, after which depreciation is very rapid.

#### More Figure Puzzles

Commonly, however, horses are sold off the farm before the point of depreciation is reached. Also, what the horse eats in the way of hay and grain costs the farmer just what it costs him to raise that amount of feed, not what the same amount of provender would bring at market prices. True, had the horses not been there to eat the hay and the oats and had they been taken to the market and sold the farmer would have realized their current market value, but because he did not do so is no reason why he should be charged up with that market value as cost. It has been proven that a tractor, properly utilized on the farm, will increase grain production by from 30 to 70 per cent. If the farmer fails to attain this production because he does not use his tractor properly no one presumes to charge up the failure at current market prices as part of the cost of operation, yet it would be as right and legitimate in the one case as in the other.

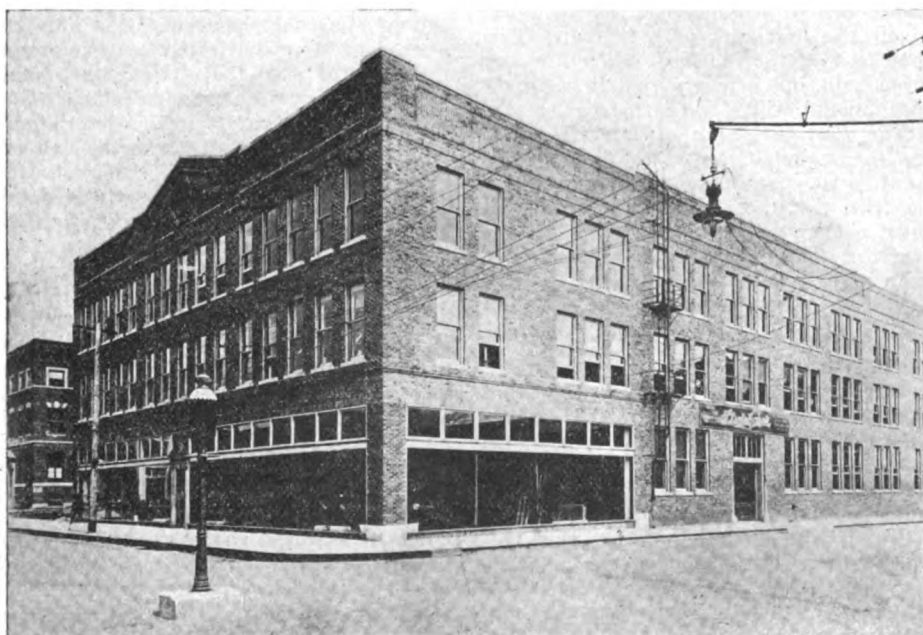
The fundamental distinction which must be drawn between horse maintenance and operation and tractor maintenance and operation has been gone into at considerable length because *the dealer who sells tractors should perceive it clearly.*

The argument based upon any comparison between relative costs of tractor farming and horse farming is not legitimate upon any plan of comparison yet devised, and the dealer who depends upon it is very likely to go wrong.

The sooner dealers and farmers both understand this the better. Even were it possible legitimately to compare the relative costs of tractor farming and horse farming it is doubtful if it would be very favorable to the tractor in a majority of instances. *Nor need it be.* Actually it is of little material or economic importance to the farmer whether it costs less to farm with a tractor than with horses or not. It has been proven that tractor farming is so *enormously more productive* than horse farming, when the tractor is utilized as it ought to be, that the question of relative cost sinks into comparative insignificance.

#### Entirely a Different Question

The tractor on the farm is justified by many things of far greater economic importance. In short, tractor farming is entirely different from horse farming; it introduces different methods and for different purposes; requires different and specialized equipment; produces different and more dependable results—all without reference to and independent of relative cost. What some of these differences are and how important they are to the farmer and how they justify the tractor is a story which will be told in a later issue.



*New building in which the Studebaker business in Des Moines has recently been located*



# What Is a Non-Essential?

By RAY W. SHERMAN

"I TELL you, Mr. Reilly, this motor car business ought to be stopped. It interferes with the war. It is a non-essential—"

"If you say that again I'll sue you for slander!" retorted Reilly, smiling, and Pat Madden, ward leader and digger into anything where there was a ray of limelight, looked puzzled.

"Say what?"

"Non-essential!" declared Reilly.

"Well—isn't it?"

"Well, is it? What is a non-essential anyway?" demanded the Sennett dealer.

"It's something you can get along without," Madden asserted.

"And you can get along without a car, can't you?"

"Yes," replied Madden.

"So it's a non-essential then, is it?"

"Certainly it is," Madden retorted.

"There are thousands of people running around in cars, wasting gasoline, spending money that ought to go into Liberty bonds, and—"

"Is your necktie an essential?" interrupted Reilly.

Madden put his hand on the flaming covering that adorned his chest. "Why—yes—sure it's an essential."

## What Makes It Essential?

"If it were not an essential you wouldn't wear it, would you?"

"Certainly not! Everybody wears neckties—"

"Does that make them essential?"

"Well—it has something to do with it—but—look here, Reilly, you couldn't go without a necktie."

"Who said I could," shot back the Sennett dealer. "I'm talking about your necktie, not mine. You talked about my cars; why can't I talk about your necktie? Why do you need a necktie, Pat? You could get along without it, couldn't you?"

"But everybody wears neckties—"

"Nearly everybody has cars, too, but that's got nothing to do with it? If the fact of universal use makes a thing an essential then a car is an essential, and if the people must be educated to do without some of the things they've always used, why don't you make a fine big hit as a patriot and start going without a necktie?"

"Just see all the publicity you'd get in the newspapers! Can't you see the headlines now: 'Madden comes out against neckties,' and then there would be a pic-

ture of you minus your necktie. And then everybody would say it was a great idea and the first thing you know the stores would have to put all their neckties back into the warehouses and all the quarters and halves and dollars that have been going for neckties would go for thrift stamps and bonds. Great idea, don't you think?"

For a few seconds Madden's mind was stampeded by the thought of all the limelight he would get, but then he came back to earth: "Why, that's foolish. Reilly, and you know it!"

"But why does anybody need a necktie?"

"What Would People Say?"

"People would talk about me—"

"That's what you want, don't you?"

"I couldn't meet people and talk to them. I couldn't get along without a necktie. Not having one on would make me look ridiculous—"

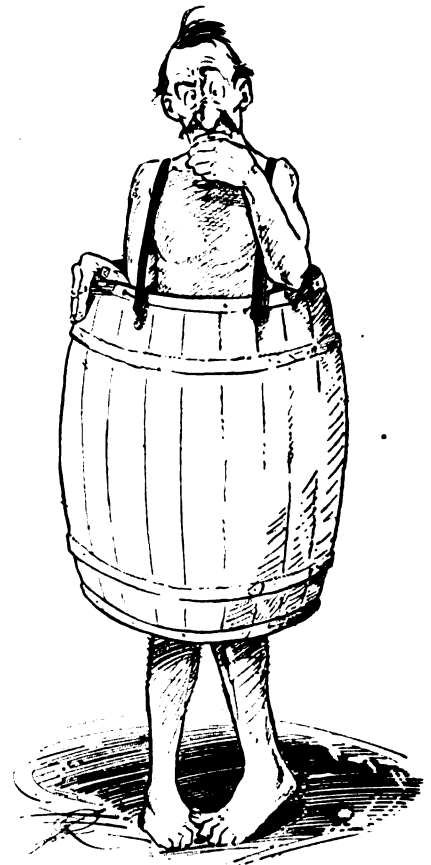
"Well," countered Reilly, "you don't need your undershirt, do you? The weather is warm. You're too hot anyway. Why do you need an undershirt? They cost a dollar or so each—and that's four thrift stamps. Why not be a real patriot and come out in favor of not wearing undershirts? Some hot day you'd make a great hit."

"That's foolish, Reilly. It—"

"Well, then, why not go without socks? Why not wear dollar hats instead of that fine lid you are sporting around? Why not wear soft collars and save laundry bills? Why not hock that fine sparkler you are flashing and stick it into Liberty bonds? Why not let your pants go unpressed and save tailor bills? And you have a new belt, while you probably could steal a line out of Pete's harness shop and save that much more for thrift stamps."

"And you've got a shoe shine this morning. And you've hooked a shave somewhere. It isn't long since you paid for a haircut—I suppose. You probably ate things for breakfast you could get along without. And instead of walking down here you probably rode in a street car. Don't you think you are using a lot of non-essentials, Madden? Don't you think you ought to get behind this war in better shape and help hop the thing over? Seems to me you're rather unpatriotic."

"Oh, bosh! That's nonsense!" Madden



retorted. "I'm just as patriotic as you are. If you wear a necktie I've got a right to wear one. But this motor car thing is different. Every man wears a necktie, but not every man has a motor car."

"Yes," Reilly replied, "and every man wears an undershirt—but they don't all cost a dollar. Therefore, I suppose it's unpatriotic to wear dollar undershirts."

"Not if you've got the—"

"Just what I thought," retorted the Sennett dealer. "If you've got money enough to buy bonds and at the same time buy shirts and things that fit in with your accustomed manner of living and with the circles in which you make a living it isn't unpatriotic. Am I right?"

"That's about right," Madden admitted. "You see—"

"Then why is it unpatriotic for a man to buy a car if he has money enough to buy the car and bonds too?"

"It's—well—the car is a non-essential." Madden was right back where he started.

"Is Dr. Hankey's car a non-essential?"

"Well—I wouldn't say that—"

"Is Alderman Brown's car a non-essential?"

"Well—you see—"

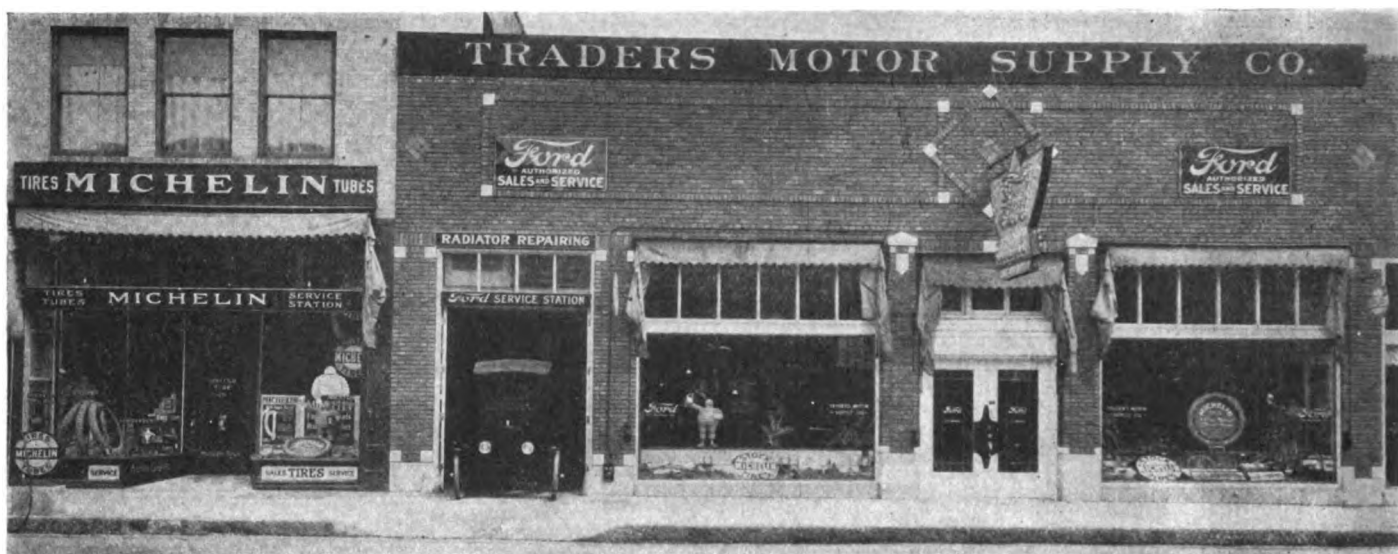
"Well, whose car is a non-essential, Madden?"

"Well—let's see—oh—right off hand I can't say—I—"

"What is a non-essential, Pat? Tell us." And here Tommy Trumbull walked over and smiled at the ward heeler.

"Oh, go to h—!"

And Madden put on his non-essential hat, jerked at his non-essential necktie and went down the perfectly non-essential sidewalk.



## Michelin Dealers in Window Contest

*Prizes Aggregating \$175 Won by Dealers in Cities  
from Coast to Coast — Thirteen Awards Made*

**M**ICHELIN tire dealers throughout the United States have been participating in a window display contest, which began May 1. Prizes were awarded last week by a committee consisting of H. M. Kiesewetter, Wales Advertising Co.; F. H. Kraemer, American Lithographing Co., and a representative of Motor World, all of New York City.

There were 13 prizes—three firsts and ten seconds. The three firsts are illustrated on this page and the ten seconds on the opposite page. The firsts are \$25 and the seconds \$10, making \$175 in all.

The requirements were: 1—Michelin

goods must predominate, although other goods might be used.

2—A background, furnished by Michelin, must be used.

3—Two Michelin casings must be shown.

4—At least one Michelin tube must be used, so placed as to show that it is made in a curved or ring shape.

5—Several tube boxes must be used.

6—Michelin tire accessories must be displayed also.

7—The window must be photographed and the picture submitted to the judges.

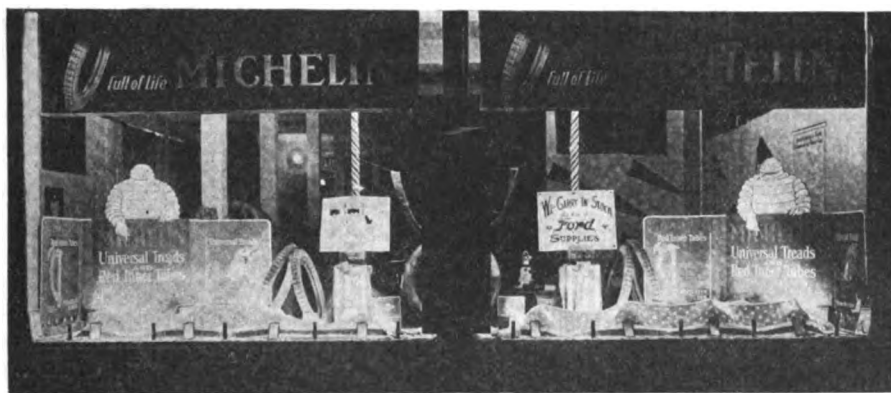
### ON THIS PAGE

*Winners of the three first prizes*

### ON THE OPPOSITE PAGE

*Winners of the ten second prizes*

The windows were judged on the basis of originality and merit of display and advertising effectiveness. A study of the windows will show the attention that was devoted to these displays. Some of the window trimmers worked out original ideas in excess of those recommended by the contest manager. The cut-outs and backgrounds were used in particularly effective ways.



### The Three Firsts

Top of page—Traders' Motor Supply Co., Spokane, Wash. Entire front of four windows done in a particularly effective and original manner.

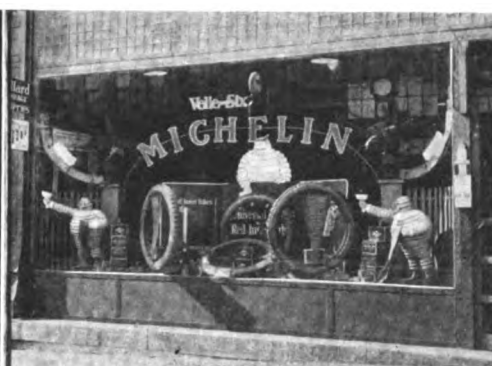
Above—Royal Blue Garage, Sheridan, Wyo. In addition to standard fixtures, patriotic streamers were worked into a well balanced display.

Right—Electric Construction & Motor Co., Findlay, Ohio. Note how cartons are piled in front of background without hiding it.





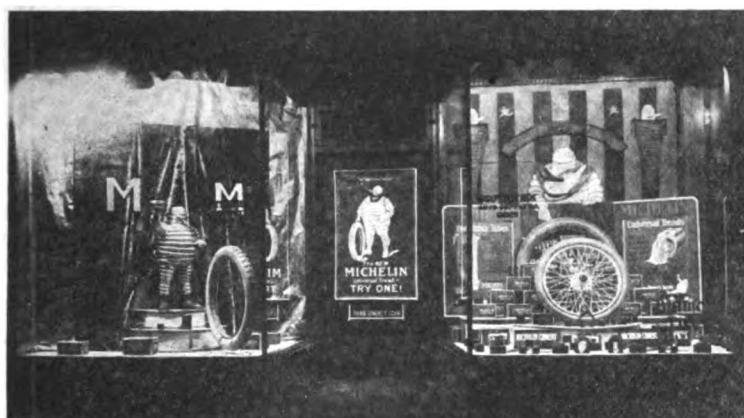
*Bozeman Vulcanizing Co., Bozeman, Mont.*



*Iowa Haynes Motor Car Co., Burlington, Iowa*



*Witch City Vulcanizing Co.,  
Salem, Mass.*



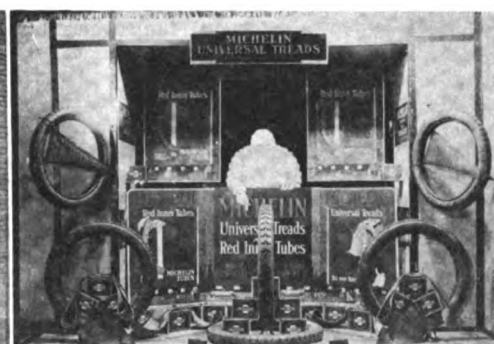
*Southwick Auto Supply Co., Topeka, Kan.*



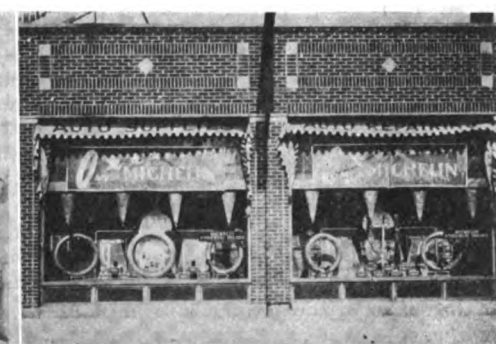
*Wild-Bear Garage Co., Worland, Wyo.*



*Passaic Auto Co., Passaic, N. J.*



*Barber & Ross, Washington, D. C.*



*Herman Jehle, Newark, N. J.*



*Waterville Motor Co., Waterville, Maine*



*Morristown Motor Car & Repair Co., Morristown, N. J.*



# A CHANCE FOR MEN

## WHO LIKE ACTION

Join the Tank Corps—Ride to Berlin, Don't Walk—The Army Wants 3,000 Real, Hot, Spizzerinktum Boys Who Can Handle Guns and Gasoline and Who Would Like to Get Where They Can Pot the Most Germans per Shot

### IS THAT YOU?

**I**F you are one of the mental and physical aristocrats of America's citizenry—if you are the owner of a sound body, a clear head, an executive, mechanical mind—if you seek vigorous service—if you want to ride to Berlin instead of walk—if you want to do the utmost damage to the Hun—JOIN THE TANK SERVICE. It will give you experience, rank, training and excitement to your heart's content.

The aristocracy of the United States Army—the Tank Corps—is in the making. It still requires 3000 tractor drivers, heavy truck drivers and automobile engine mechanics who have physical strength, mental strength and executive ability—men without a single physical defect who can think quickly and clearly, and, if need be, think for others. These men can be from 18 years to 41 years of age. *They must be men:*

#### Does This Fit You?

1—Who are eager to show the Hun what real American man-to-man frightfulness comprises.

2—Who can stand 3 days of service in tanks out of every 9 days.

3—Who can laugh at gas attacks and at the fumes of the powder, gas and tank engine.

4—Who can maintain their mental poise while their bodies are racked by the sliding, twisting, jolting and dropping of the tank as it works over the battle fields.

5—Who can keep cool in the intense heat of the tank, hotter than the boiler rooms of a battleship.

6—Who can quietly concentrate their efforts efficiently despite the thunder of the machine guns, the tractor tracks, the engine and the rattle of the enemy fire against the tank.

Tank service—they call it "treat 'em rough service"—is the most vigorous one of military work. The Tank Recruiting Division makes no effort to withhold the strenuous duties of its personnel from possible recruits. Men who enter the tank service must come knowing how vigorous their duties will be.

The soldiers of the tank service are asked to stay in the tanks at the battle

front but 2 hrs. at a time. To work beyond that is a physical impossibility for the average sound man. For this reason those in the tank service, which offers many great opportunities, constitute a personnel that can well be called "The aristocracy of the U. S. Army."

Every member is physically and mentally capable. Every member must be versatile. He must be able to lead the tank if necessary. He must be capable of making quick repairs on either the engine or the machine gun when occasion demands. He must have the nerve to substitute one barrel after another on the machine gun as the barrels are shot away by enemy fire. Even so slight a defect as dependence upon eyeglasses rejects the applicant for tank service.

Opportunities offered in the tank work include practically a vacation for 6 days out of every 9, during which time the men do light work behind the front. They include officerships, both non-commissioned and commissioned, to practically every member.

In fact, if a tank corps recruit does not become at least a non-commissioned officer within 60 days after his acceptance, he is not considered fit.

There are 2 officers to every first class private in the tank division. The division is in its infancy. It will expand and **EVERY MAN WHO JOINS TODAY IS CERTAIN OF OFFICERSHIP IF HE MAKES GOOD. NO COMMISSIONS ARE GRANTED TO ANY ONE IN THE TANK SERVICE WHO ENTERS FROM CIVILIAN LIFE. EVERY COMMISSIONED OFFICER EXCEPTING A FEW WELL QUALIFIED WHO HAVE BEEN TRANSFERRED FROM THE ENGINEER CORPS HAS BEEN DRAWN FROM THE RANKS.**

There are two classes of tank service. The light tank service which includes military duty in the light tank comprising 2 men—a sergeant commander and a corporal driver. In this tank the driver operates the gas engine, the commander operates the machine gun, but both men must be sufficiently well versed in mechanics to be able to take the other's place if necessity demands.

The heavy tank service comprises a

personnel of eight men. One commissioned officer commanding, one sergeant driver, and six machine gun operators of non-commissioned rank. There are four guns in the heavy tanks which can be trained at one time, four of the machine gun operators shooting the guns while two act as ammunition passers.

All members of the tank service are given training in wireless operation—giving them an excellent trade after the war.

Recruits for tank service can apply, if of draft age, to their local boards, and if under 21, and over 31, to any United States Recruiting Officer, or they may apply directly to the chief recruiting station at Washington. Included with the application must be an informal report by a United States recruiting officer as to the mental alertness and physical fitness for tank service.

#### Train at Gettysburg

The Tank Corps Concentration Camp is located at Gettysburg, Pa., and is called Camp Colt. Preliminary training is given here and is followed by overseas training and subsequent service. In the past the training on this side has been brief, about one month, with 4 months training in England. Tank officers, however, have returned to this country and will shortly lengthen the duration of training on this side to 3 or 4 months with but 1 or 2 months of training in England.

The pay of the enlisted personnel for the tank service is as follows:

Grade,	In the U. S., Monthly	Foreign, Monthly
Private .....	\$30	\$33
1st-Class Private .....	33	36
Corporal .....	36	40
Sergeant .....	44	51
1st-Class Sergeant .....	51	60

Members of the tank corps are also entitled to the additional allotments if they have dependents, which amount to \$15 per month for a wife, \$25 per month for a wife and one child, \$32.50 per month for a wife and two children, \$37.50 per month for a wife and three children, \$42.50 per month for a wife and four children, \$10 per month for a parent.

*Once a Trade-In Price Is Made to a Prospect Should It Ever Be Changed?*

## Should the Star Salesman Have Prima Donna Privileges?

*Tell Us How You Keep Good Feeling in Your Own Sales Organization*

**B**EFORE an automobile salesman becomes the manager of a selling force he is supposed to have shown himself more than ordinarily successful in selling cars and in handling men; yet no matter how able he may be in closing a deal himself, or in actual direction toward that end in the case of his staff, he can become a positive disorganizer, despite his selling and directing ability if he or the company he represents plays into the hands of a "star" salesman who is paid a high salary with a commensurately low commission.

Such a policy works in three directions to undermine the house:

### Things That Happen

1—It creates and fosters jealousy and bad feeling on the part of the less favored salesmen.

2—In the case of the "star," or "prima donna," as the others are apt slightly to refer to him, it engenders a superior or "toploftical" attitude in nine cases out of ten, threatening and usually destroying any esprit de corps which may have been existent up to that time.

3—The customer, or prospect, soon becomes thoroughly disgusted when he finds he is quoted different prices by different salesmen and, if he trades at all, ends by going over the heads of the sales force to the manager or some member of the firm.

The manager of such a house soon learns that much of his time is occupied in straightening out "feuds" and adjusting petty quarrels. He is selling friction instead of service and the house is receiving discord instead of co-operation.

A prominent Philadelphia selling concern which has a policy whereby it avoids any such disagreeable and destructive contingency as the foregoing is the Hupmobile Sales Corp., of which Raymond T. MacFarland is sales director. MacFarland, in citing phases of good and ill-judged salesmanship, had this to say of the "star" salesman plan:

"To many automobile selling concerns keep the majority of their salesmen dissatisfied through lack of co-operation with them and because they do not afford a fair chance in making sales. This stands out perhaps as noticeably as in any other instance in the case where a customer wishes to buy a new car on a trade-in proposition.

"On entering the showroom the customer is met by a member of the sales force and is quoted a price on the used car which he wishes to trade in. If the manager is not in, the prospect, in about

seven cases out of ten, leaves the showroom displeased on the occasion of his first visit, because he is dissatisfied with the price the salesman has quoted for his used car. He feels sure that had he seen some one in larger capacity than the salesman—the manager or a firm member—he would have been offered \$700 instead of \$500 for his car. So the customer is apt to go away without even leaving his name, intending to return, interview a 'man higher up' and get the high dollar for his car.

"Sure enough, later on he returns and this time the salesman who first had talked with him is out. But the customer would not have stopped to talk with him anyway. He goes direct to the manager, who turns him over to the 'star' salesman. The result is the prospect obtains his \$700 for the used car, because the 'star,' through his higher salary and lower commission, has been able to offer him the \$200 difference, which the ordinary salesman could not do. But it has been a costly deal in the end for the company. Why? Well, figure it out.

"From the viewpoint of the customer: Is it likely that, having been able to obtain his own terms by ignoring the selling force and going direct to the manager, who turns him over to the 'star,' the customer never again will waste his time—for it would be wasting his time in such a case—by talking with an ordinary salesman? Is that good for a house that is paying to maintain a selling force?

### What the Customer Thinks

"From the viewpoint of the ignored salesman: Is it a healthy attitude of mind to realize that his house is giving him absolutely no co-operation in cases of this kind, and will he be apt to throw enthusiasm into his work?

"Having been out, as mentioned, when the prospect called the second time, the salesman who first interviewed him, let us say, of course knows nothing about the sale on the prospect's own terms. When that salesman returns to the showroom he probably asks: 'Any sales made in my favor while I was away?'

"No," he is told. Later he sees the customer entering to pay the difference between his traded-in car and the one he has just purchased. The salesman is surprised and when the customer leaves the salesman finds out what the terms have been. He goes to the manager. 'Where am I protected in this transaction?' he inquires. 'You aren't pro-

tected,' he is cheerfully told, 'for you had nothing whatever to do with it.'

### "What's the Use?"

"Of course, being human, the salesman could feel only discouraged at being unable to get a square deal from his house. He then either hangs on with a 'what's-the-use?' attitude of mind, which soon renders him inefficient, or else he leaves the company's employ at the first opportunity, associating himself with some house that plays fair with its force.

"As a matter of fact, there should be no 'star' salesman tolerated in any organization. Of course, there always will be in a selling organization some man of unusual selling ability, some one whose ingenuity, tact, knowledge of his merchandise and of human nature can dispose of a car easier than the plain ability of his associates; but *there should be the same basis of commission for every man on the staff and this should be rigidly adhered to, no matter what the salary of the salesman.*

"The especially able salesman gets more salary anyway. He needs no further incentive, aside from desire to excel, to make a sale. Because of his superior talent he probably would sell the car anyway. Why, of all men on the force, should he be allowed to offer a customer a better price?

"The poorest salesman on the staff, if allowed to quote \$200 higher than his fellows on a trade-in proposition, probably could make a sale.

"To guarantee the salesman a livelihood the house should:

"1—Have one price on a used car—that is, decide definitely before the customer leaves what price he shall be allowed for his trade-in proposition, this price to prevail, no matter who makes the sale.

"2—Have that car described for condition and extras, including the price of the new car he is to buy, and a record made of the data and filed.

"3—Have it so arranged that if the customer calls, if need be an entire year from the occasion of his first visit, the price will be quoted on his used car according to the number of miles run since the first quotation, allowing no more, at any rate, than at first asked, no matter what improvements and repairs have been made on it, as the machine actually has aged and there is a natural depreciation that improvements and repairs do not overcome in full.

(Continued on page 26)

# Drive-away Bureau

## ASK FOR INFORMATION—AND—GIVE US INFORMATION

*THIS department will be continued indefinitely. Its aim is to provide a clearing house for information as to routes, road conditions, hotel rates, garage rates, unfair conditions, new routes, etc. Motor World will make an effort to get any information you desire. In return, all dealers are requested to forward promptly any information they have regarding drive-aways. Send your information so it will reach New York not later than Monday of each week.*

## Routes Followed by Buick Dealers from Chicago to Ten Other Cities

Editor Motor World: As per your request we are pleased to hand you herewith copies of letters from various dealers operating under this branch, giving automobile routes from Chicago to the following towns: Danville, Ill.; Decatur, Ill.; Mattoon, Ill.; Paris, Ill.; Peoria, Ill.; Cedar Rapids, Ia.; Dubuque, Ia.; Keokuk, Ia.; Ottumwa, Ia.; Waterloo, Ia.

Trusting this information will serve your purpose, we remain, Yours very truly, Buick Motor Co., Chicago Branch, S. A. Burke, Manager.

### Chicago to Danville

Buick Motor Co., Chicago, Ill.: As requested in your letter of June 8, we are giving you herewith the route which we always use in driving between Chicago and Danville.

Leaving Chicago, we drive down Michigan Avenue, then out to Jackson and Washington Park and South Chicago; through South Chicago to Hammond, Ind.; then straight south through Hammond, Dyer, Brunswick, around Cedar Lake, through Lowell, Schneider, Conrad, Morocco, Kentland, Freeland Park, Ambia. From Ambia there is a choice of two roads; one goes to Hoopeston, where you can pick up a pavement from Hoopeston straight through Rossville to Danville, or go south through Ambia to Pence, then to Alvin, Ill.; Bismarck, Ill., to Danville.

We would recommend the road from Ambia to Danville via Hoopeston, although we do not always drive that way. The entire road is a fine, hard, smooth gravel or crushed stone all the way from Chicago to Danville. From Hoopeston to Danville there is a pavement which is completed with the exception of about two miles, and it is only necessary to detour a short distance around this section, when it is bad weather, and during good weather one can come straight through. This incompleting section is between Hoopeston and Rossville.

In all the time that we have been driving to and from Chicago we have never had any trouble with any of the authorities in any of the cities, and we seldom use license plates and have never been questioned on this score.—Holmes Garage Co., W. G. Holmes, Danville, Ill.

### Chicago to Decatur

Buick Motor Co., Chicago, Ill.: Since about all the towns between Chicago and Decatur have gone dry there is not much need of routes. However, I will give you the short cut, and when roads are fairly good is the best.

Take Archer Avenue through Summit to Joliet, go south from east side of court house four miles, follow white and yellow mark to Bloomington, through Dwight, Pontiac and Lexington, south on South Main Street, from Bloomington, follow big "M" mark to Decatur through Hayworth, Wapella, Clinton and Maroa.

If the roads are muddy go by Crown Point, Danville, Monticello and Decatur.—Yours very truly, A. H. Drysdale, Decatur, Ill.

### Chicago to Mattoon

Buick Motor Co., Chicago, Ill.: At any time dirt roads are in shape: Chicago to Harvey, Chicago Heights, Steger, Momence to Kankakee, Chebanse, Gilman, Onarge, Paxton, Rantoul, Champaign, Tolono, Tuscola, Arcola, Humboldt, Mattoon.

This time of the year roads are fine, no detour.—Mattonk Implement & Buggy Co., Mattoon, Ill.

### Chicago to Paris, Ill.

Buick Motor Co., Chicago, Ill.: Referring to your favor of June 8, I am enclosing herewith list of towns which we passed through in driving from Chicago branch to Paris. This is a rock and gravel road all the way with the exception of two or three short stretches. The

road is usually good at all times during the summer.

List of towns: Chicago, South Chicago, Hammond, Dyer, Brunswick, Lowell, Schneider, Lake Village, Morocco, Kentland, Freeland Park, Ambia, Pence, Danville, Paris.

We have not driven this road this summer and cannot give you any information on detours. We have never had any trouble at any time from a bad attitude of local authorities toward automobile traffic.

Trusting that this is the information that you desire, I beg to remain, Yours very truly, K. R. O'Hair, Paris, Ill.

### Chicago to Peoria

Buick Motor Co., Chicago, Ill.: We have been over quite a number of different routes, but have found the following to be the best route at all times of the year and now don't come any other way:

Maywood, Naperville, Aurora, Bristol, Plano, Sandwich, Ottawa, Streator, Ancona, Long Point, Dana, Minonk, Rocknoke, Benson, Metamora, Washington, East Peoria, Peoria.—Yours truly, Somerville Buick Co., W. C. Somerville, Peoria, Ill.

### Chicago to Cedar Rapids

Buick Motor Co., Chicago, Ill.: In reply to your letter of the 7th pertaining to our road in driving from Chicago, etc., wish to advise on leaving your branch we go west on Twenty-second Street as far as Sixtieth, then north to Twelfth Street, then west, passing speedway on north, continuing due west on the best drive on our way home.

This leads into Geneva, where we intersect the Lincoln way, which we follow. The Lincoln is being repaired west of Rochelle. We make detour for this, turning south at first turn after crossing iron bridge some little distance after passing through Rochelle, going south, turning at first road leading west, which brings you into Lincoln further west.

On my last trip we were compelled to make one other detour in Illinois, but I have forgotten just the place, but the



road is nicely marked and it is impossible to make any mistake. We follow the Lincoln till reaching Mt. Vernon, Iowa, where we make a short-cut, saving some 7 miles, to Cedar Rapids.

As to accommodations along route, I find the best places to eat along route to be first at DeKalb at restaurant soon after crossing railroad tracks on right side of street. DeKalb on west side of street going north, a short distance north of Standard filling station. Sterling very good, also good at Clinton. As to hotel conditions, DeKalb very poor, Sterling and Dixon fair, Clinton good and Cedar Rapids best in the world. We find Geneva very bad for both eats and sleep, in fact, I have been stung at eats and garage accommodations, and also DeWitt, Iowa, is one of the best places along line to eat. I stop at the one further south on right side of street, which is as good as any along line.—Yours truly, H. D. Miller, Cedar Rapids, Iowa.

### Chicago to Keokuk

Buick Motor Co., Chicago, Ill.: In reply to your letter regarding route from Chicago to Keokuk, would advise to take the following route:

Chicago, west on Jackson Boulevard, to Washington Boulevard, one block south at the end of Washington Boulevard. This will put you on the Cannon Ball Trail, which follow to the following towns: Aurora, Bristol, Plano, Sandwich, Samonak, Mendota, Princeton, Kewanee, Galesburg. Leave Cannon Ball Trail and go west about 10 miles, then angle southwest to Monmouth. From Monmouth to Burlington, following yellow poles, then to Keokuk, red and black poles.

I have tried a number of routes but find this to be the best kept road of any. Regarding hotels and garage facilities, wish to say that I usually get out of Chicago in time so that I can get home same day, or drive all night, arriving home the next morning, so do not know much about hotels and garages, but have always been able to get a good room for 75 cents and garage for 50 cents. When we had a party of ten in the winter we got a rate of 50 cents a night at the hotel.—Auto Sales Co., W. J. Harter, Keokuk, Iowa.

### Chicago to Ottumwa

Buick Motor Co., Chicago, Ill.: Yours of the 7th received in regard to the conditions of roads, routing, etc. I will be glad to give you all the information to the best of my ability.

The towns that we pass through en route to Ottumwa from Chicago are as follows, and you will see them listed as they come.

You take the Lincoln Highway from Chicago to Sterling, Ill., which includes Wheaton, West Chicago, Geneva, DeKalb, Rochelle, Dixon and Sterling.

Then here you pick up the C. K. C. & G. road including Gault, Erie, Moline, Rock Island and Davenport.

Here you leave the C. K. C. & G. and take up the Southwest Trail to Ottumwa,

including Muscatine, Columbus Junction, Washington, Fairfield and Ottumwa.

The roads are in only fair condition as you have to detour several times on account of bridges being out or the road being fixed in some way, and bad places here and there for various reasons.

You will find that the hotels and garage accommodations in the above mentioned towns are very good. We have always found it so and been treated very nicely and never overcharged for anything to our knowledge.—Davis Auto Co., D. B. Davis, Ottumwa, Iowa.

### Chicago to Waterloo

Buick Motor Co., Chicago, Ill.: Replying to yours of June 7, will say that the writer has been pretty busy to give you the information you desire regarding routes we drive and road conditions.

In driving from Chicago we go west on Twenty-second to the end of paving and to the first street to the right, go right to Lake Street, following Lake Street until you strike the Lincoln Highway, going through Wheaton, West Chicago, Geneva, DeKalb, Rochelle; about three miles west of Rochelle turn left at school house, go left until you strike the Lincoln Highway again, which you will know by turning left at the best traveled road. This has been a detour for the past two years. Dixon (good hotel), Morrison, Clinton (good hotels); Lafayette, garage right at rear; DeWitt, Wheatland, Stanwood, Mechanicsville, Mt. Vernon (short route from Mt. Vernon to Cedar Rapids, ask at cafe, south side of main street), Cedar Rapids, Red Ball Route to Waterloo, passing through New Hall, Vinton and LaPorte City.

We some times drive the Grant Highway, which is marked on West Lake Street (black band in center, yellow band top and bottom), which is the shortest route to Waterloo, passing through Elgin, Belvidere, Rockford, Freeport, Lena, Warren, Apple River, Shullsburg, Wis.; Hazel Green, Wis.; East Dubuque, Dubuque, Iowa; Farley, Dyersville, Manchester, Winthrop, Independence, Jesup and Waterloo.

At no time have we thought that we have been overcharged by hotels and garages along the way.—West Motor Sales Co., C. A. West, Waterloo, Iowa.

### Chicago to Dubuque

Buick Motor Co., Chicago, Ill.: We are in receipt of your letter of the 7th regarding the road to use in driving from Chicago to Dubuque. The towns we passed through were: Elgin, Marengo, Belvidere, Rockford, Freeport, Galena, Warren, Shullsburg, Benton, Hazel Green, Dubuque.

The roads are good with the exception of a stretch about 12 miles long between Rockford and Freeport. We did not leave the main road. The hotel and garage accommodations are very good. Hoping the above information will be satisfactory, we remain, Yours very truly, Scheppele Motor Co., Chas. A. Scheppele, Dubuque, Iowa.

### Had Good Trip

Editor Motor World: In a recent issue of your valuable publication, in the department devoted to "Drive-Away" news, the writer read that a recent "drive-away" party had suffered some inconvenience and unjust prosecution while coming through some towns in Pennsylvania.

The writer has just returned with a party, driving eight Fulton trucks from the factory up on Long Island, making the trip in good time, bringing the trucks through in perfect shape, having absolutely no trouble.

Our route brought us through Pennsylvania, and, in fairness to the authorities of that state, I wish to say that we could not have asked for better treatment. The officers and people seemed to take an interest in our undertaking, giving us all possible assistance, and in several of the smaller towns citizens volunteered to ride with us a part of the way, putting us on the proper road to detour a bad stretch of road, meeting with this same painstaking interest in all the states through which we passed.

With the exception of some bad road between Fredericksburg and Richmond, due to the unusually heavy traffic, we enjoyed a very successful trip, bringing the trucks through cheaper than by freight. I don't think that we shall ever go back to freight shipments. Trusting that you will continue the "drive-away" section in Motor World, we remain, Anchor Auto & Truck Co., E. L. Dickson, Service Manager.

### Here's a Woman Car Washer

ST. LOUIS, June 29—Office Manager Noonan of the N. & M. Garage had been having his troubles with the car washing at night. In his effort to get a good man he had bid the pay up to \$18 and then the man either was never through or the work was not done properly. He got desperate and advertised for a woman. One of the applications was a capable looking woman who was working for \$7 a week, doing heavy work in a factory. Noonan offered her \$12 a week, told her she would have the work laid out and she must complete it. She accepted. Not a single complaint has been heard on her work, but several compliments have been passed. She reports that she is not employed all night and if the garage wants more cars washed it goes with the same wages. She is pleased, the car owners are pleased and Noonan is delighted.

### Springfield Views the Fordsons

SPRINGFIELD, ILL., June 29—A demonstration of the Fordson tractor was held here under the auspices of the Jennings Auto Sales Co. Four machines were used in the work, two of them driven by women. Almost five thousand people were on hand for the show and many orders were taken.

### Cadillac to Continue Present Type

DETROIT, June 29—The Cadillac Motor Car Co. will continue its present type of chassis and body styles this year.

*What the Dealer Must Know About*

# Farm Lighting System

The motor car dealer and garageman is not only familiar with but is an expert on gasoline engines and electricity as applied to automobiles.

He understands pretty thoroughly the construction, operation and repair of gasoline engines, spark plugs, ignition devices, carbureters, cooling systems, and storage batteries.

There are but few new things the dealer will need to familiarize himself with when he sells farm lighting and power plants.

**A**LL farm lighting and power plants have four main units, the engine, the generator or dynamo, the storage battery and the switchboard. In some plants the engine and generator are in one unit, an extension of the crankshaft of the engine forming the armature shaft of the generator or being directly connected to it by a coupling.

In other plants, these units are separate and the generator is driven by a belt. Very often it is arranged this way so that the farmer can make use of an engine which he already owns and uses for other farm purposes, and the generator can be belted up to it and the batteries charged while the engine is doing other work.

## Engines

Various types of engines are used for driving the generator, ranging from  $\frac{1}{2}$  to 10 hp. An endless variety of design is in evidence, embracing both 2 cycle with its explosion every revolution, and 4 cycle with an explosion every other revolution.

Methods of cooling include both air and water. The air-cooled types have fins on the exterior of the cylinder with an outside casing through which air is blown by a fan formed in the wheel spokes, or by a sirocco fan, which consists of a large number of small vanes on the outside of the flywheel, similar to a steam turbine.

In the water-cooled models the cylinder is surrounded by a waterjacket as in automobile practice, and the water is cooled by one of three methods: running water, integral hopper and separate hopper or tank.

The first method consists of connecting a supply of running water to the jacket and allowing it to run through, the rate of flow being controlled by a valve.

The integral hopper is a tank cast with the waterjacket, there being a large area

to the juncture between the hopper and the jacket. The hopper may hold from 3 to 10 gal. of water.

Where the hopper is separate, it consists of a metal tank with open top and two pipe connections, one at the bottom for water to go from the hopper to the jacket, and one about half way up through which the hot water from the jacket enters the hopper. In either the integral hopper or separate hopper types circulation is by thermo syphon system.

The engine shaft bearings in these plants where the engine and generator are in one unit are often of ball or roller type and in some cases even the connecting rod lower bearing is of ball type. Where farm engines are used, the bearings are plain.

Kerosene is used for fuel in many of the plants, starting with a small quantity of gasoline. Sometimes this gasoline is run through the carbureter until the engine heats up, and then a three-way cock enables the kerosene to be turned into it.

In other makes, kerosene only goes through the carbureter, and a priming pocket on the cylinder head supplies enough gasoline to get the cylinder heated sufficiently to use kerosene. In the unit plants the carbureter is often an integral part of the crankcase instead of being a separate instrument.

Ignition in most cases is high tension through a regular spark plug. Current is furnished by magneto or battery and coil. Ignition follows automobile practice very closely.

## Electrical Terms

Several terms are used in lighting system work which are not familiar to the automobile dealer.

The terms *volt* and *ampere* are already well known to him, but at the risk of repetition a brief explanation is given so that a clear understanding of the new term *watt* can be made.

A *volt* is a unit used to measure electrical *pressure*. Voltage is pressure and is analagous to pounds of water pressure.

An *ampere* is a unit used to measure *current flow* and is analagous to measuring quantity of water flowing. When measured in time, 1 ampere flowing 1 hr. equals 1 ampere hr. Storage batteries are rated in ampere hrs.

A *watt* is a unit used to measure electrical energy, or the product of the volts and amperes. A current of 30 volts and 2 amperes would be stated as 60 watts. It takes 746 watts to make an electrical hp. A kilowatt (kw.) is 1000 watts or about 1  $\frac{1}{3}$  hp. expressed mechanically. For example:

2 amperes at 30 volts equals 60 watts  
5 amperes at 110 volts equals 550 watts  
750 watts equal  $\frac{1}{4}$  kilowatt  
1 kilowatt will light 66 15-watt lamps

## Generators

Generators are direct current, never alternating current. They are designed to produce voltages of 30, 40, 52 or 110 and an amperage of 5, 10, 20, 30, etc., at certain speeds, usually between 1500 and 2000 r.p.m.

A generator wound to give 30 amperes at 30 volts will give 900 watts or about 1  $\frac{1}{4}$  hp., and allowing for mechanical and electrical losses, it will require an engine of 2- $\frac{1}{2}$  hp. to drive it.

A simple rule to find the necessary horsepower to drive the generator is to multiply the rated volts by the rated amperes (giving watts), and dividing this by 746 (giving hp.) To allow for the loss in efficiency and provide sufficient power at all times this amount should be nearly doubled to get the required horsepower to drive the generator.

Various methods of winding generators are employed; *series*, in which the field windings and the armature windings are in series; *shunt*, in which the field and armature are in parallel, and *compound*,

in which both series and parallel are employed.

On 30 and 40-volt systems, shunt-wound generators are most satisfactory, as the current more or less regulates itself according to the amount called for to charge the battery.

On the higher voltage systems the compound-wound machines give more perfect automatic regulation. Series-wound generators are not employed for this class of work.

#### Current Controlling Devices

Current output of generators is regulated by resistance in the field circuit which is controlled by a rheostat on the switchboard. The more resistance in the field circuit, the smaller the current output. The rheostat is usually operated by a hand wheel, but in some cases it is automatic.

Generator bearings are usually ball type with oil lubrication. The generator is kept cool by fan blades mounted near the commutator. Where the generator is a unit with the engine, cool air is drawn through the generator by the fan blades on the flywheel. The generator when belt driven, is mounted on a sliding base so that the belt tension can be adjusted.

By throwing the battery current back through the generator, it acts as a motor and turns the engine over, starting it. Electric starting can be done both in the unit machines and those that are belt driven. Sometimes a compression release is used to make the engine easier to turn over and thus cut down on the amount of current used. As soon as the engine starts, it turns the generator which in turn starts to generate current for the battery.

#### Batteries

Two general types of batteries are used, the lead battery having plates of lead suspended in a dilute solution of sulphuric acid, and the Edison battery with nickel and iron plates in an alkaline solution.

Lead batteries give 2.2 volts per cell and Edison batteries give 1.2 volts per cell.

Cells are connected in series so that a 16-cell lead battery will give 35.2 volts which drops to about 30 volts at the lamp terminals on account of the wire resistance.

The voltage varies with the condition of the battery, being high when fully charged and dropping as low as 1.8 volts per cell when nearly discharged.

On a 30-volt system the range will therefore be from 35.2 down to 28.8 volts. This fluctuation will not dim the lights enough to be annoying and can be neglected.

On the 110-volt systems, however, the voltage will range from 93 to 115 and devices for raising or lowering the voltage are used. The method usually used is to have from 1 to 5 extra cells called "end cells" which are added to the battery as needed or taken out as needed. This is worked from the switchboard. End cells are only used on the high voltage systems.

In charging the 30-volt batteries, the engine is started up and it runs till the battery is fully charged, when it automatically stops. In the large plants with 110 volts, a "tapering charge" is given, more current being put into the battery at first and the current cut down as the charge proceeds. The following rates are approved:

#### Various Charging Rates

To charge battery in 8 hrs.—

40 per cent of total current for 2 hrs.  
30 per cent of total current for 2 hrs.  
20 per cent of total current for 2 hrs.  
10 per cent of total current for 2 hrs.

To charge battery in 5 hrs.—

30 per cent of total current for 1 hr.  
25 per cent of total current for 1 hr.  
20 per cent of total current for 1 hr.  
15 per cent of total current for 1 hr.  
10 per cent of total current for 1 hr.

To charge battery in 4 hrs.—

35 per cent of total current for 1 hr.  
30 per cent of total current for 1 hr.  
20 per cent of total current for 1 hr.  
15 per cent of total current for 1 hr.

Tapering charges are given to prevent excessive gassing and heating which would occur if too much current were put into the battery near the end of the charge.

Batteries have to be filled with distilled water occasionally to make up for loss by evaporation just the same as starting and lighting batteries. In lead batteries the condition of the battery is ascertained by hydrometer and voltmeter.

A density of 1275 deg. indicates battery fully charged. Below 1150 deg. battery is discharged. A voltage of 2.2 per cell indicates fully charged, below 1.8 per cell, discharged. Lead batteries are in either glass or rubber jars, sealed in either case, with filler cap and vent in top. Edison batteries are in welded steel containers with filler cap and vent in top.

#### Switchboards

Switchboards are on panels, usually of slate and are either attached to the wall by steel brackets or are mounted on steel floor stands. The switches and instruments on the boards vary with the different makes and with the size of the plant.

**Rheostat.** This is a current resistance device so arranged that the resistance can be varied. It is in series with the generator field windings and controls the current output of the generator. Increasing the resistance decreases the current and decreasing the resistance increases the current.

**Circuit Breakers** automatically break the circuit if for any reason it gets too heavy for the machines or wiring to carry safely. For instance, if the engine stopped for lack of fuel, the current in the battery would short-circuit through the generator armature, draining the battery. The circuit breaker would automatically break the circuit in such a case. The circuit breaker consists of a helix of heavy copper wire through which the full strength of the current circulates. This helix attracts an iron core whose pull is resisted by a power-

ful spring. The magnetic pull and the spring balance each other under ordinary conditions. When a heavy short circuit occurs, the pull of the helix, and consequently its core, becomes so great that the spring is overcome and a latch gives way, allowing the main line switch to fly open.

**Cut-In** operates the reverse of the circuit breaker or cut-out. When the current in the generator is strong enough, the cut-in closes the charging switch, and when the current drops too low, it cuts off the current.

**Voltmeter** measures the voltage and is connected in parallel with the battery and generator circuit. To prevent the waste of current, it is switched on with a button when it is desired to read the voltage.

**Ammeter** measures the amount of current flowing from the generator to the battery, or the battery to the lamps or other devices. It is connected in series between the battery and generator.

**Fuses** are made of lead alloy so that they will melt if the current gets too heavy and thus protect the meters, lamps, etc.

**Pilot and Ground Lamps** are only used on the larger plants. They are lamps mounted on the switchboard and the ground lamp will light if a ground should occur. The pilot lamp shows that current is being generated.

**Switches** vary in number and kind with the different systems and are used for charging, starting engine, light mains, power mains, etc.

#### Lighting

Incandescent lamps are used for lighting. Practically all the lamps used today are known as "metallic filament" lamps (tungsten or Mazda). These are made in different voltages and the light output and current consumption is expressed in watts.

Lamps are obtainable in 30, 40, 52 and 110 volts and in 15, 20, 25, 30, 40, 50, 75, 100 watts and upwards. They give about 1 candlepower for each 1.3 watts, thus a 20-watt lamp will give about 16 candlepower. Carbon filament lamps require over 3 watts per candlepower.

#### Comparison of Watts and Candlepower

15 watts equal	12 candlepower
20 watts equal	16 candlepower
25 watts equal	20 candlepower
30 watts equal	24 candlepower
40 watts equal	32 candlepower
50 watts equal	40 candlepower
75 watts equal	60 candlepower
100 watts equal	80 candlepower

It is impossible to give any rule as to the number or candlepower of lamps required to properly light a certain type of room. Much depends on the size, height of ceiling, shape, color of walls, rugs and furniture. Architects have some rules for working these results out, but they are complicated and not suitable for use with these plants. Roughly speaking one 16 candlepower lamp should be provided for every 50 sq. ft. of combined wall and ceiling area.



*A Department of*

# BETTER MECHANICS

No. 73

## Standard Adjustments on the Buick Light Six

**T**HE Buick line, including the light six, with which this article deals, is so well known that it is unnecessary to go into detail regarding many of its features. Hence only the facts regarding the care or repair which are not likely to be known by the average mechanic who has not had experience on this make are given.

Much of the information, although applying particularly to the Buick light six, is of value in working on most makes of cars.

Lubrication will be taken up first because the rules laid down are of quite general interest. Medium oil is used in the engine, care being taken not to fill above the petcock level or smoking may result.

Contrary to general practice this operation does not take care of the timing gears, which are oiled by removing a wing plug on the left side of the timing gear case and filling with steam cylinder oil to within 1 in. of the level of the opening.

Engine oil is used on the pump shaft bearing, 1 or 2 oz. being added at frequent intervals, but do not try to fill it or it will overflow into the timing gear case.

The gearbox, rear axle and steering gear should be supplied with steam cylinder oil.

Engine oil is used in the fan hub, a small amount of oil being injected after the plug is removed.

Steam cylinder oil is used in the universal joint. Move the car slightly until the plug in the joint comes opposite the offset in the driving ring, then unscrew and inject oil.

At the remaining points requiring lubrication, engine oil or soft cup grease is used, depending on whether there is a grease cup or not.

The engine oil used should be a high grade medium heavy mineral oil with a flash point of not less than 400 deg. Fahr. and a viscosity of 80 to 90 Tag-

liabue or 62 to 72 Saybolt at 212 deg. Fahr.

It is not expected that a garageman buying oil can determine whether the oil meets these specifications, but at least they can be used to check the oil salesman's claims.

There are five places to lubricate the motor generator. Oiler A should receive four or five drops a week. This lubricates the bearings on the distributor shaft.

Oiler B cares for the roller bearings on the rear end of the armature shaft

and should have four or five drops a week.

Lubricator C in the front end of the motor generator supplies the ball-bearing on the armature shaft, the distributor driving gears and the generator clutch. This is packed with cup grease and should be repacked twice a season. It is advisable to add a small amount of oil in cold weather to soften the grease.

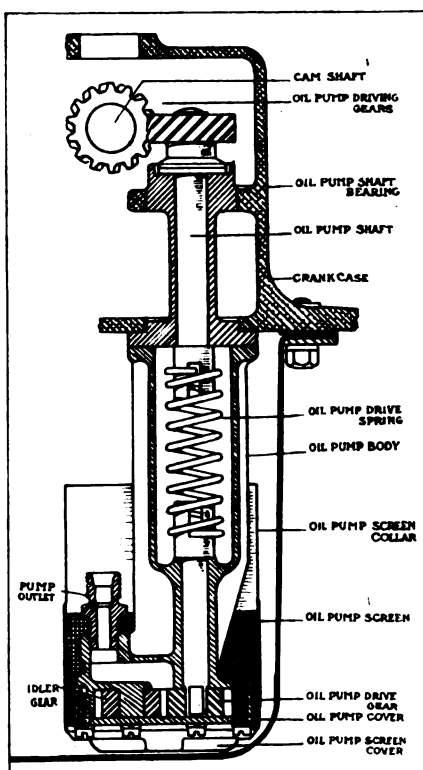
Grease cup D lubricates the starting gear shaft and the one-way clutch. It requires a turn or two every 2 weeks.

The inside of the distributor head upon which the rotor button bears should have a small amount of vaseline applied to it two or three times during the first 2000 miles so that the button can polish its track and prevent cutting.

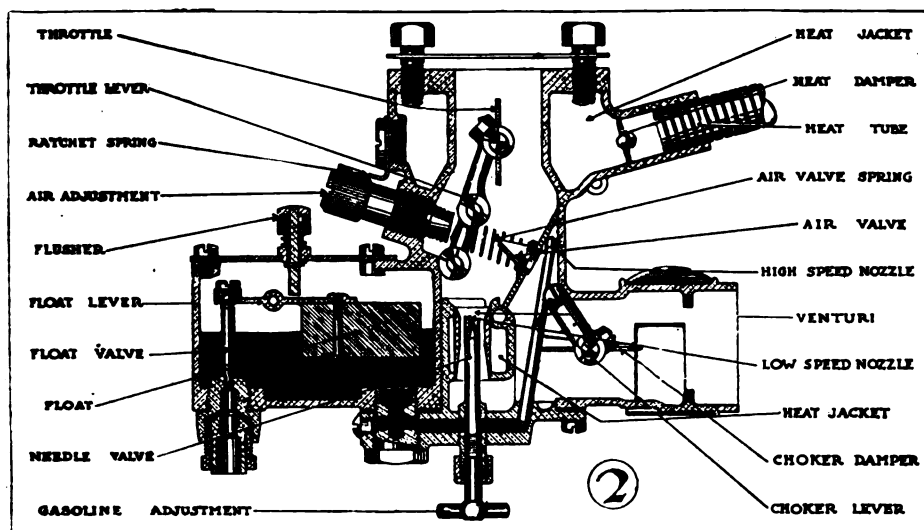
Before leaving the question of lubrication it is wise to briefly describe the engine oiling system. Oil from a reservoir in the lower half of the crankcase is sucked through a strainer into the pump enclosed in the rear end of the crankcase, from where it is forced to the sight feed on the instrument board and returns through the oil distributor pipe to splash troughs. Some of the splash is caught in ducts which supply the main bearings. The oil pump is a gear type, Fig. 1.

Fuel is supplied by a vacuum system. In common with the many other makes of cars using this system it is necessary to see that the vent tube does not become plugged. Also in case of lack of fuel it is well to notice whether the flapper valve is stuck. This is quite likely to happen on cars that have laid idle all winter.

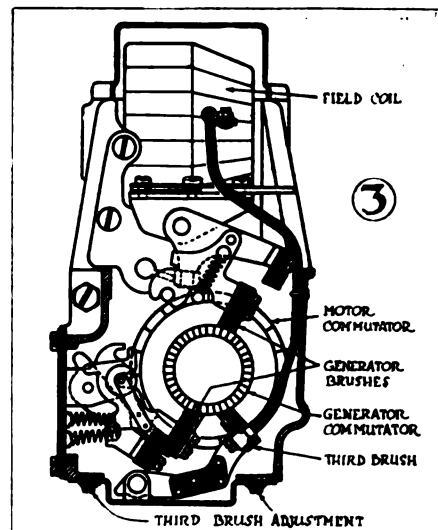
The carbureter, Fig. 2, has a needle valve for controlling the supply of fuel and a spring-closed air valve which allows additional air to pass at high speed. Heat is supplied by an exhaust heating jacket, a damper interconnected with the throttle reducing the amount as the throttle is opened. In addition, warm air is taken directly into the carbureter, the



*Details of the oil pump in the Buick  
light six*



There are two adjustments on the Buick carburetor, the low-speed nozzle and the high-speed nozzle. This illustration shows their location and also the internal construction of the instrument



The generator is of the third-brush regulated type in which the location of the third brush determines the output

amount being controlled by a three-way valve from the instrument board.

To adjust the carburetor open the needle valve one full turn. Set the air adjusting screw so that the end is even with the point of the ratchet spring just above it. Start the engine and allow it to run until warm. With the spark lever fully retarded turn the needle to the right until the engine idles smoothly. Advance the spark lever and turn the air adjustment screw to the left until the motor begins to slow down or skip, then turn to the right until the engine runs smoothly.

The general design of the Delco starting, lighting and ignition outfit, is so well known that it is unnecessary to say any-

thing about its operation. It is well to point out, however, that the current output can be regulated by moving the third brush.

Thus, a car which is habitually driven at low speeds or has frequent stops or both, requires more current than the machine which has a high average speed and few stops.

Moving the brush to the left increases the output, Fig. 3. The maximum should never exceed 20 amp.

When the position of the brush is changed it should be reset on the commutator with fine sandpaper. The brush is carried on a metal plate located underneath the commutator on the front of the machine.

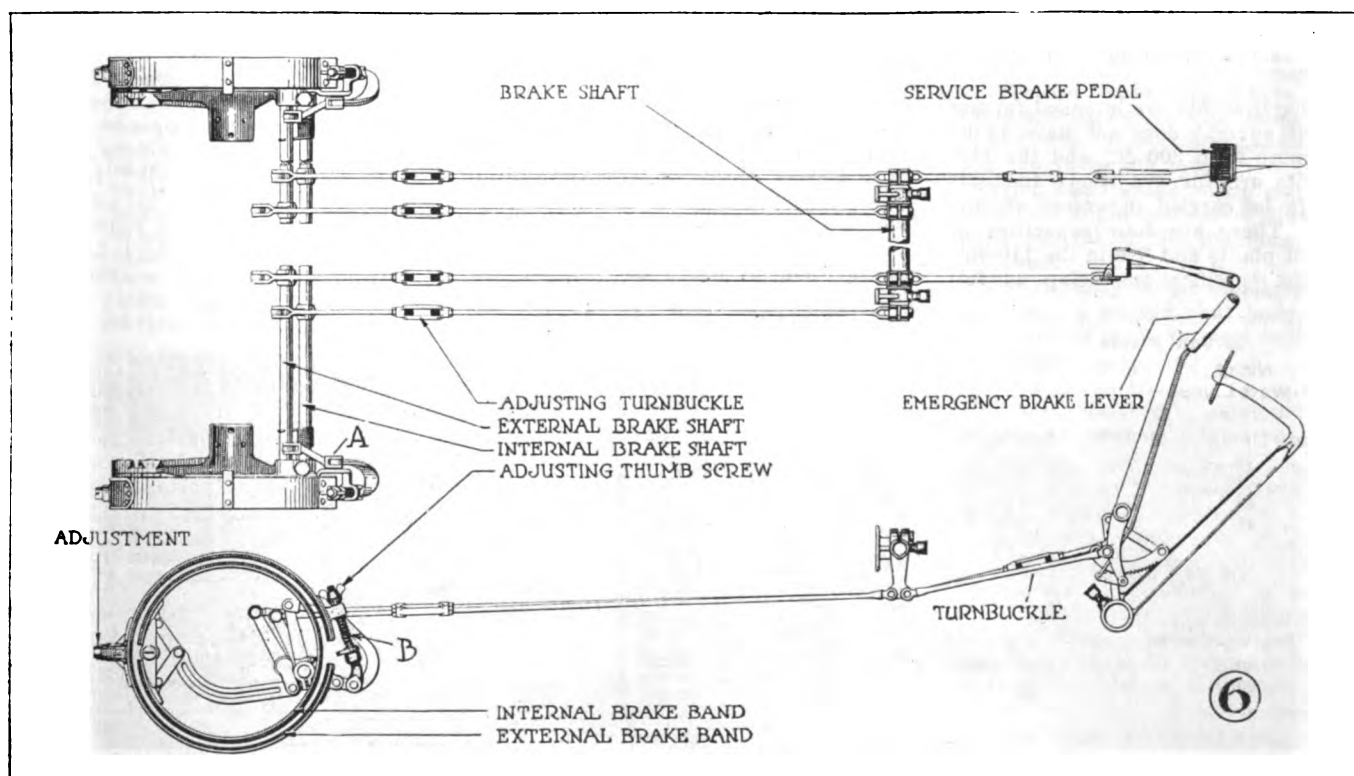
The breaker point gap should be 0.018 in. and the spark plug gap 0.028 in.

Valve clearances should be 0.005 in. with the engine cold.

One-half teaspoonful of kerosene on each valve stem once a week will render sticking improbable.

If difficulty is experienced in removing the exhaust valve cages preliminary to grinding the valves due to rust or corrosion, the tool shown in Fig. 4 should be used. It is inserted through the intake valve opening and set up on the top of the piston directly under the exhaust valve.

After removing the exhaust valve cage nut and spring the engine is turned over, the upward movement of the piston push-



Complete brake lay-out of the Buick light six showing the proper points to make adjustments for wear

ing the tool against the valve and thus forcing the cage out. The hole in the end of this tool is for the insertion of a wire to facilitate its removal.

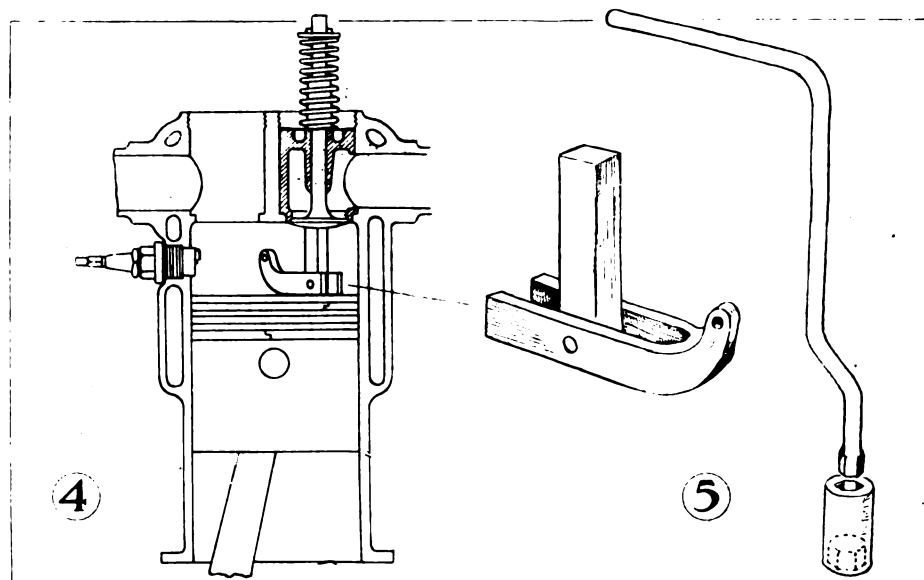
In assembling pistons and connection rods be sure that the piston pin bearings are offset from the center line of the piston and that a small arrow cast inside the piston skirt points in the direction of the offset.

Pistons should be assembled on the rods with the arrows pointing toward the flat side of the oil dipper. This brings the piston pin bearing closer to the camshaft side of the motor, and during compression stroke the gas pressure overbalances the piston so that it does not slap back under the force of the explosion.

Fig. 5 shows a wrench which is made especially for the nuts holding down the cylinders. All the nuts can be readily reached with it.

For adjustment of the bevel pinion and gear it is best to remove the unit and do the work on the bench. The unit may be unbolted from the front side of the axle housing.

The brakes should be adjusted so that there is 1/16 in. clearance between the lining and the drum. In adjusting the service brake be careful not to take up



To remove the exhaust valve cokes a special tool like the one pictured is useful. It causes the piston to force out the cage. At the right is a special tool for removing the cylinder head bolts

on the turnbuckles, either the one under the floorboard or at the rear.

The proper point of adjustment is at the band itself. There is a thumb nut for taking up on the upper half of the band and a hex nut for adjusting the

lower. Only by adjusting in this way can satisfactory brake action be secured.

The turnbuckles on the service brake rods are properly adjusted when the pin A, Fig. 6, on the brake lever arm is directly in line with the lever arm B.

## Edison Farm Lighting and Power Plants

THE Edison Storage Battery Co., Orange, N. J., makes farm lighting and power plants in nine different capacities and in two voltages, 30 and 110. The power plants are complete with battery, switchboard and generator, but no engine is furnished. If an engine is desired one may be ordered through the Edison Co.

The 30-volt outfits are intended for use where the current does not have to be carried more than 300 ft., and the 110-volt outfits are for use where the current is to be carried in excess of this distance. There are four capacities in the 30-volt plants and five in the 110-volt plants, the specifications being as follows:

30-Volt Plants			
Type	No. of 20-Watt Lamps Burning 5 Hours	Dynamo Amperes	Engine Hp.
B2-30	12	16	1½-2
B4-30	24	30	2-2½
B6-30	36	45	2½-3
A4-30	45	60	3-4

110-Volt Plants			
Type	No. of 20-Watt Lamps Burning 5 Hours	Dynamo Amperes	Engine Hp.
B1-110	20	10	2-2½
B2-110	45	20	4-4½
B4-110	88	30	6-7
B6-110	132	45	10-11
A4-110	165	60	12-15

The engine and generator are not made

by the Edison company, and any kind or type can be furnished, or if an engine is already available, it is not necessary to include one in the outfit.

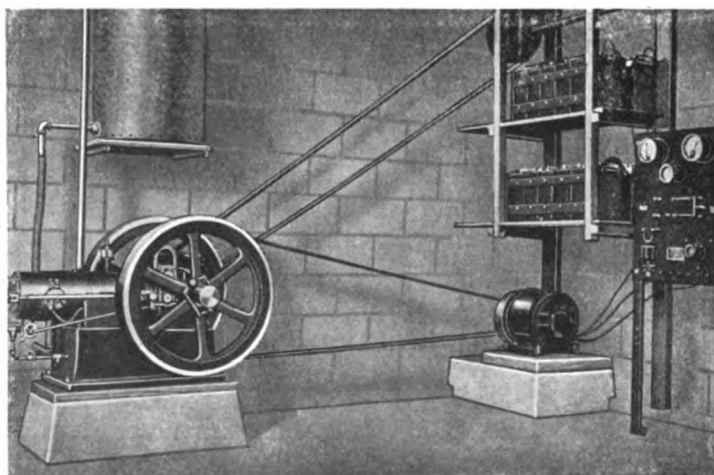
The switchboard is on a panel of Monson slate and has a charging rheostat to control the current from the generator, underload cutout to prevent the battery discharging through the generator if the engine should stop, switch and current meters. The wiring to the switch is so arranged that lights can be taken from the generator alone, from the generator while the battery is being charged, or from the battery alone.

The batteries supplied are the Edison alkaline cells in which no acid or lead plates are used. These cells are in solid steel containers, welded, and give 1.2

volts per cell. They are exactly like Edison batteries for other purposes, except that they have a high amperage rating and have additional space over the plates so that they only require filling at infrequent intervals. The following are the prices of Edison farm lighting and power plants:

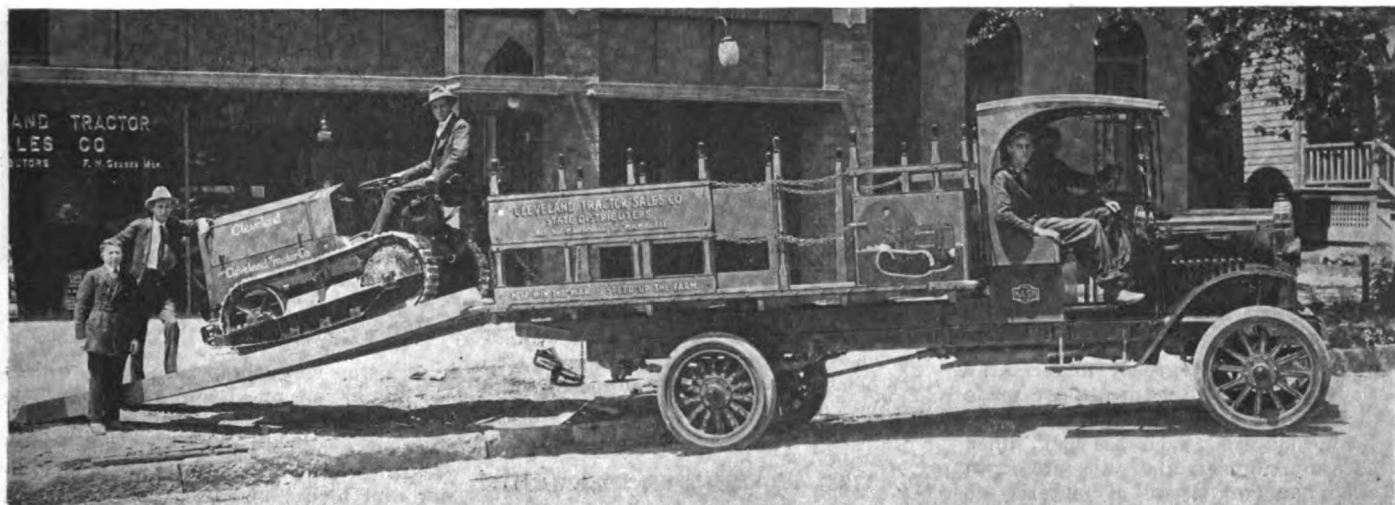
Type	Battery	Switch-board	Dynamo	Complete Plant Less Engine
B2-30	\$174.24	\$52.00	\$70.00	\$296.24
B4-30	232.32	58.00	89.00	379.32
B6-30	319.44	63.00	114.00	496.44
A4-30	392.04	71.00	126.00	589.04
B1-110	511.83	62.00	114.00	687.83
B2-110	682.44	65.00	150.00	897.44
B4-110	909.92	72.00	190.00	1171.92
B6-110	1251.14	84.00	250.00	1585.14
A4-110	1535.49	97.00	336.00	1968.49

The Edison farm lighting system is furnished in nine different sizes, though the equipment does not include an engine, which must be purchased separately





## Hauls Demonstrating Tractor on Specially Built Truck



SOMETHING new in the way of demonstrating tractors has been evolved by F. W. Geddes, general manager of the Cleveland Tractor Sales Co., Milwaukee, state distributor of the Cleveland tractor, in collaboration with Alfred Reeke, president and manager of the Alfred Reeke Co., Milwaukee, state distributor of the Nash. The result is that Geddes has purchased a Nash 2-ton truck with a special stake body, and equipped with a special loading platform, and is now touring the agricultural districts of Wisconsin with a Cleveland tractor as the freight.

The accompanying photograph shows

the Cleveland tractor being loaded on the Nash truck from the sidewalk in front of the Cleveland headquarters at 415-417 Marshall Street. It is a matter of only a few minutes to run the tractor on or off the truck under its own power. The grade up the special loading platform is an easy one for the tractor. It requires only two men to handle the outfit in its travels, one being the driver of the truck and the other the salesman.

The spirit of the combination of truck and tractor for sales work is found in the slogans painted on the sides of the stake body, viz.: "Help Win the War. Speed Up the Farm."

By means of this idea Geddes expects to cover the greater part of the most fertile agricultural sections of Wisconsin before snow flies. It is possible in this manner to go direct to the ultimate consumer, as it were. In its travels the truck stops at farmhouses and the tractor is on the ground for a practical demonstration within a few minutes. As soon as the demonstration is over the tractor is run back on the truck under its own power, and the truck is ready to visit the next prospect, which is the farmer next door, for every farmer of to-day realizes the value of the tractor and is a tractor prospect.

## Anthony Automatic Rocker Dumping Body for Ford Truck

AN automatic rocker dumping body that requires neither man nor engine power to dump the load nor return the body to normal position is being built to fit the Ford 1-ton truck by the Anthony Co., Inc., Streator, Ill. The body is box shaped with a hinged tail gate, the body and load being carried on cams which rest on inverted V-shaped racks attached to the chassis by bolts passing through the standard holes in the rear cross member and by U-bolts on the front ends.

When the body is loaded, the back is heavier than the front, and when the latch is released the body tilts back by gravity. When the load has been dumped, the front of the body is heavier than the back and the body swings back to place.

It is possible to arrest the body movement at any angle and hold it there, and this feature in connection with the tail gate, which can be held at any opening, makes it possible to spread material while the truck is moving.

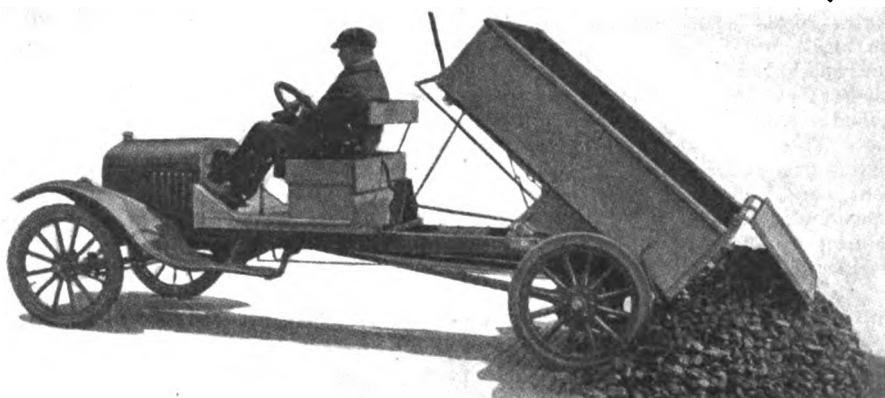
It is not necessary for the operator to leave the seat to perform any of the operations of dumping, returning the body to normal position or adjusting the opening of the tail gate.

The entire body load, in its running position is carried well forward of the rear axle. As the body rocks back, the load is moved bodily to the rear to a point where the frame is cleared, thereby permitting a considerable angle of dump.

The restraining device forward consists of a support for the forward end of the body frame, a latch and small drum mounted directly beneath the latch. Wound around this drum is a chain which

is attached to the body frame. This arrests and limits the final dumping angle of the body. Connected to the same lever that operates the latch is a small contracting band brake which can be tightened by a slight movement allowing complete control of the dumping action at all times.

The capacity of the standard dumping body is  $1\frac{1}{2}$  cu. yd., but body modifications can be made to meet individual requirements.



# Repairshop Shortcuts

*From Motor World Mechanics*

## No. 1728—COWL-PROTECTING PAD

A pad to prevent greasy fingermarks on the cowl when adjustments are made on the engine. The pad or shield is made of heavy material such as duck, lined with canton flannel, and clips are sewn between the two layers of material to hold the pad to the ledge of the cowl. Larger shields are made so that the corners are tied to the windshield standards and the clips hold the other corners.—C. P. Geen, Olds Motor Works, Lansing, Mich.

## No. 1729—ROLLING UP OLD TUBES

To make a neat package in rolling up an old tube which has lost its shape, the valve end of the tube is hooked over a bent rod fastened into the back part of the bench. Slight tension on the other end while rolling will stretch out all the creases and enable the tube to be rolled up neatly.—C. H. McLean & Son, Newton, Ia.

## No. 1730—FORD FRONT AXLE GAGE

A gage used in straightening front axles of Fords is made from a board 6 in. wide and 2 in. thick and 6 in. longer than the axle. Using a new axle as a template, three small angle irons are screwed to the board to locate it, and holes are bored at the exact positions of the spindle bushings, and spindle bushings are driven in the holes. By placing any axle in the same position on the board, it can be checked up for straightness and position of spindle bushing holes.—J. R. MacDonald, St. John & Titus Garage, Tenino, Wash.

## No. 1731—LIFTING CYLINDER HEADS

A counterbalanced block and fall is used for removing and replacing cylinder heads. The car is placed so that the engine comes under the hook to which the block and fall is attached and the end rope is led through another block on the next ceiling beam and a weight attached so that it hangs 4 or 5 ft. from the floor. The weight should not be so heavy that it lifts the cylinder head, but sufficient weight should be used to keep the ropes under tension.—J. F. Cavanaugh, Connecticut Telephone & Electric Co., Meriden, Conn.

## No. 1732—REINFORCING A BLOWN-OUT TUBE

When reinforcing a blown-out tube, the edges of the cut or tear are held together

and away from the lower inside wall of the tube with two spring clothes pins, the tube being laid across two supports while working on it.—C. H. McLean & Son, Newton, Ia.

## No. 1733—TO REMOVE ELEMENTS FROM BATTERY

Strap-iron hooks to fit over the battery handles are fastened to pieces of wood 2 x 4 x 14 in. The battery is placed on the floor, the hooks placed over the handles and the workman stands on the pieces of wood, holding the battery down while he pulls out the elements.—J. D. Williams, Ellarson's Battery Shop, Everett, Wash.

### Make a Dollar

*HOW often have you been compelled to rack your brain to overcome some difficulty? But when you did find a solution—what a satisfaction it was! Well, here's a chance for you to dig some of those life-savers out of their hiding places and put them to work for your fellow-craftsmen. Send them to Motor World. We will pay you a dollar for every one accepted for publication.*

*The only requirements are these:*

*1—Describe the shortcut briefly but clearly, in few words.*

*2—Send a sketch, in pencil or pen, no matter how rough; our artists will finish the job.*

*3—Write on ONE side of the paper only.*

*4—Sign your name and initials, the name of the company you are with, and the town.*

*Write plainly. If your name is unusual, print it in capital letters.*

## No. 1734—PISTON RING CLAMP

A piston ring clamp is made by breaking an old ring into two parts, one a little more than half the cylinder diameter. This piece is held against the split side of the ring about to be inserted in the cylinder and holds the ends compressed till the piston drops into place.—J. F. Cavanaugh, Connecticut Telephone & Electric Co., Meriden, Conn.

## No. 1735—TORCH LIGHTER

A torch lighter is made by hooking up a spark plug to a coil and battery and closing the circuit when necessary by means of a horn button placed on the floor under the bench. The plug is most conveniently placed upside down at the end of the bench close to or on an iron bracket which holds the torch when not in use.—J. D. Williams, Ellarson's Battery Shop, Everett, Wash.

## No. 1736—PISTON TESTING WITH MAGNET

A magneto magnet is used to grip the top of the piston to test the amount of side play and the condition of the wrist pin and connecting rod bearings without removing anything from the engine except the cylinder head.—J. F. Cavanaugh, Connecticut Telephone & Electric Co., Meriden, Conn.

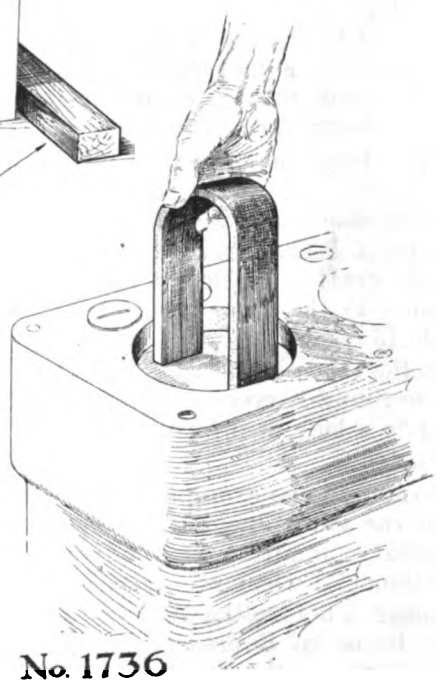
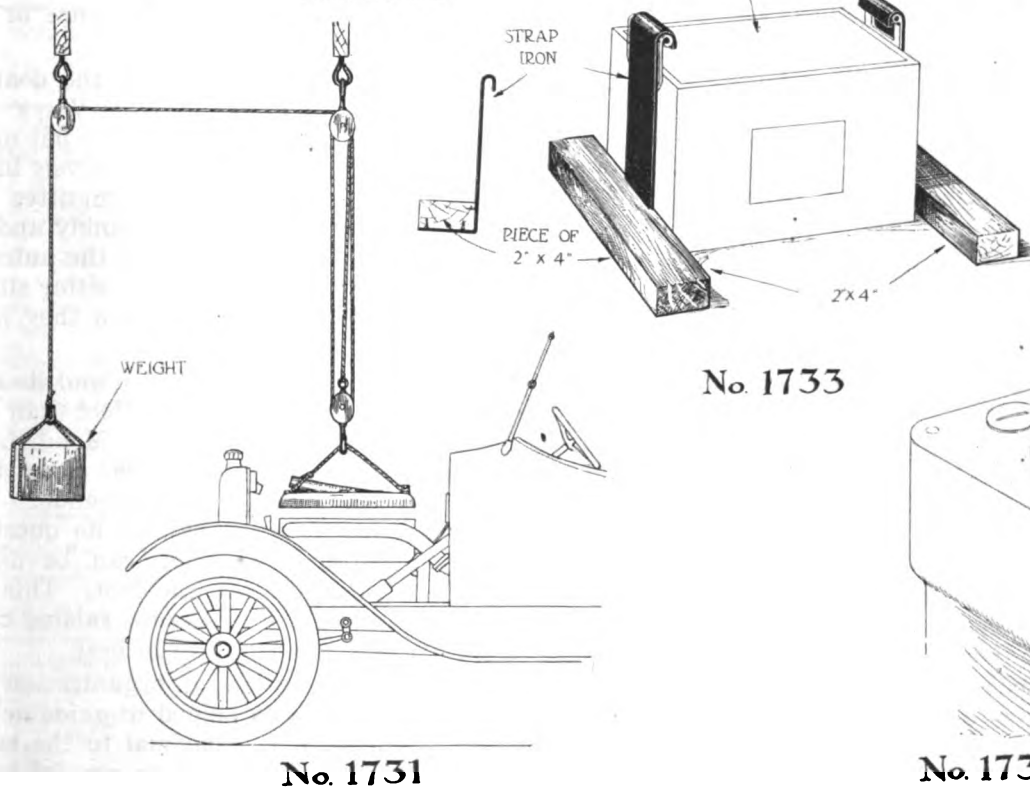
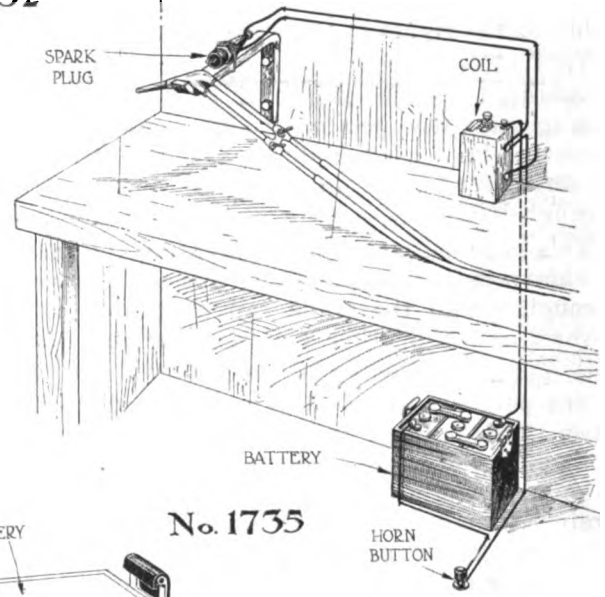
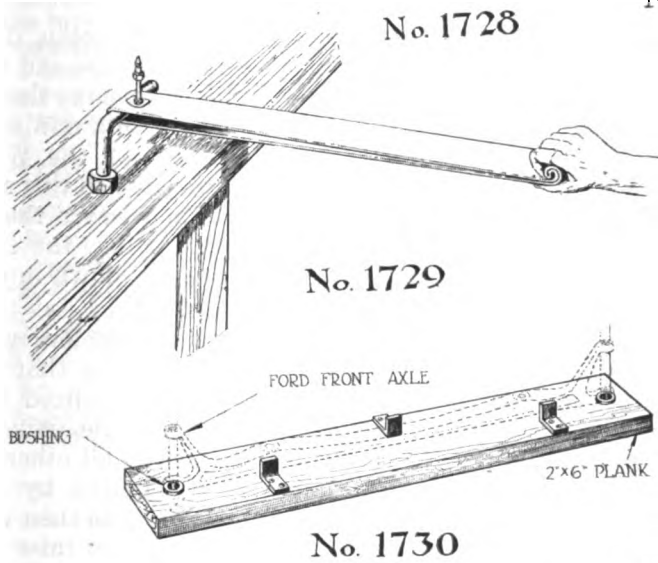
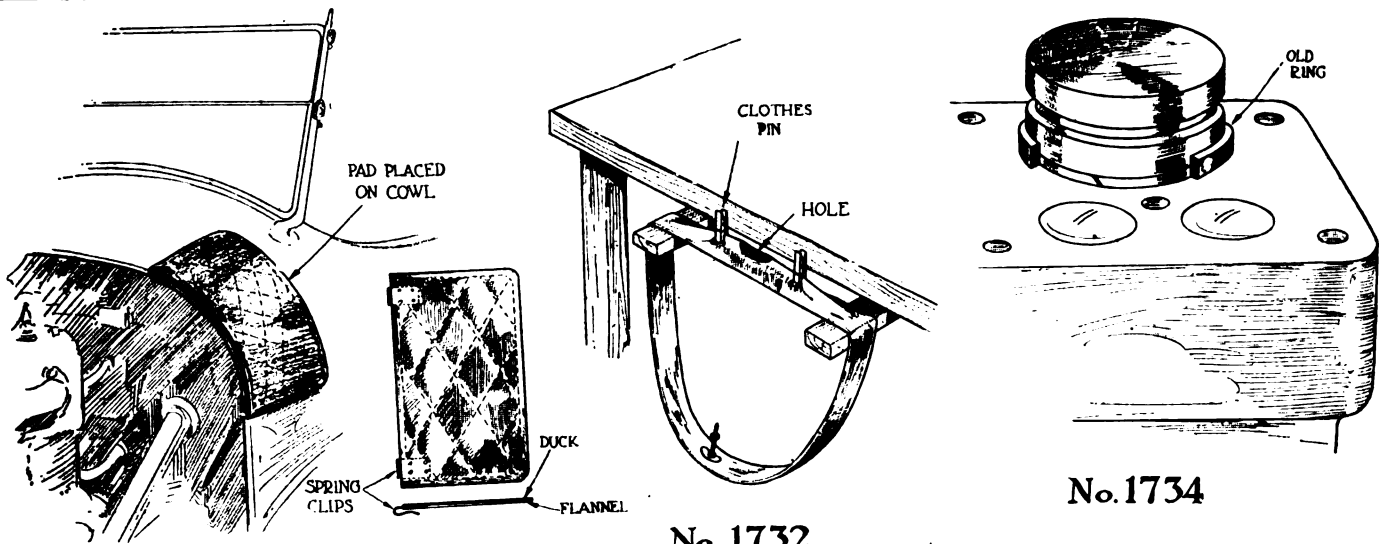
## Should the Star Salesman Have Prima-Donna Privileges?

(Continued from page 17)

"4—Have one man regularly assigned to the floor for meeting customers and make it his business to sell cars on the floor if he can. If he fails, let the next man in line try it.

"5—Make it a hard-and-fast rule that a salesman's interview with a customer entitles him to 'ownership' of that prospect for a period of thirty days—and let it be so recorded on the files, that there may be no excuses offered if one salesman tries to 'double-cross' another and get his prospect away from him. Let a second interview call for another thirty-day period of 'ownership.'

"6—If a prospect is in the city thirty days without having been interviewed by the salesman assigned to call on him, or if the prospect has been on file for that period without the salesman having interviewed him, let the salesman automatically lose his 'ownership,' the prospect to be passed along to the next in line."



# Editorial Observation

## Organization Helps Uncle Sam

**W**ITH all the organization movement that has been on in the trade for the last few years, there has been one idea predominant, and that is that the various associations are formed to fight for the rights of the trade that they represent.

This, of course, is absolutely correct, but there is in addition another side that isn't realized by the average man who gets behind an organization movement and he doesn't realize what this benefit is until long after he has profited in an unsuspected way through having been a member of an organization.

This benefit consists not in fighting for the rights of the trade but in providing a piece of machinery through which the trade can co-operate with the government and other agencies for the benefit of both the government and the trade.

The point was illustrated not long ago in Canada when the Dominion proposed to lay certain restrictions upon the automotive trade. There was a large balance of trade in favor of the United States and against Canada and the Dominion felt the need for imposing certain restrictions. Wherefore, it called together representatives of the automobile dealers and jobbers in the Dominion and asked them for information. The trade was not long in informing the Dominion government that it was organized and that it had the machinery that could lay before the government suggestions as to how the results the government wanted could best be achieved with the least disturbance of trade.

The Dominion welcomed this suggestion with enthusiasm. It said it was pleased to learn that the automobile trade was organized. It asked for suggestions. The result was that the leaders of the trade drafted a brief in short form which was presented to the government and which had considerable to do with action which was later taken. Had not the trade been organized, the government might have found it necessary to take certain steps which, due to a lack of information, might have been quite disastrous.

Another fine example of how organization can assist the government is furnished in the case of the special committee of the newly formed National Automobile Dealers' Association which last week appeared before the Ways and Means Committee of the House of Representatives at Washington. The committee of the house stated that it had under consideration four different plans for raising revenue

from the automobile industry by taxation. The newspapers have already talked of a tax running up as high as 10 or 15 per cent, and various drastic moves have been proposed.

The committee representing the automobile dealers went before the committee of the house and told how Congress could raise even more revenue than it had contemplated and could do this with a minimum disturbance of the trade. Members of the Ways and Means Committee were impressed with this suggestion and expressed themselves as pleased that it was possible for the trade to come before the committee in an organized manner and lay down intelligent and specific suggestions.

This was not a case of where the dealers were fighting for their rights. They realized that the government must have revenue; they realized that the government feels that the automobile industry must help produce this revenue just as all other industries must help produce it. Actuated by this patriotic motive the aim of the dealers was then very direct. It was to assist the government to raise this revenue with the least possible disturbance of the dealer organization of the United States.

A preliminary meeting was held by the dealers' committee before it went before the Ways and Means Committee. The suggestions were put down on paper; they were specific and comparatively brief. These suggestions were read to the committee and any questions that were asked were frankly and directly answered, and the result is that the automobile dealers of the United States have a better standing to-day in the eyes of Congress than they have ever had before.

It is the presence of the organization and its first desire to co-operate that has greater effect than any fighting spirit that can be displayed. Members of Congress are called upon to do big work. It is their job to figure out ways for raising revenue. The revenue must be raised; there can be no question about that, and the only question can be as to whether the means adopted are the best. This organization was able to tell this revenue raising committee which of its suggestions were best.

This is one instance of where an organization has not prevented action but has helped to *guide action* into channels which will be beneficial to the trade as a whole, providing its suggestions are followed. If they are not followed, it is then time to criticize.



## Letters from Readers

*THIS page is for the use of MOTOR WORLD readers with something to say. Letters on subjects of interest to dealers, garagemen, repairmen and jobbers are always welcome.—EDITOR.*

### Do You Back Order?

Editor Motor World: Responding to yours of the 17th I enclose you herewith one of our back order notices and you will find the matter referred to printed on the back of same.

I am frank to say that I was surprised and disappointed that my bringing up of this subject did not provoke more comment and discussion in the session than it did. The very fact that different accessory jobbers think best to handle their back orders in so many different ways is evidence enough that the question is a serious one and should receive considerable consideration from them. Of course, I do not mean the conditions that exist, they are receiving all kinds of consideration, but what I mean is the jobbers' way of handling same.

I am confident that the practice of some jobbers of simply cancelling all items they cannot fill is entirely wrong—

in fact, as I say on my back order notice there are many items that can be filled in no way but by being back ordered and shipped when their turn comes.

At the same time it is self-evident that a jobber has no right to back order an item and ask the dealer to wait indefinitely for it unless said jobber has used reasonable precautions to see that his own stock is completed at the earliest possible moment and also made a reasonable effort to pick up the item among the other jobbers in his vicinity.

If there is anything else I can do for you or tell you in the matter, please advise.

Yours very truly,  
FRED CAMPBELL.

### Was Retained by Federal Order

Editor Motor World: You may have heard from round-about channels that

V. A. Huck who was former assistant branch manager at Nashville, Tenn., has been arrested for pro-German remarks. This company knew this 6 months ago, and at the time would have discharged him had it not been requested by our Government to retain him in our services so that they would be able to keep a line on him. However, immediately upon his arrest, he was discharged from the employ of the company.—J. I. Case T. M. Co., Geo. A. Deckart, Advertising Manager, Racine, Wis.

### Not His Old Man

Editor Motor World: The article in the current issue of the Motor World entitled "His Old Man Was a Drunkard," has attracted my attention and compels me to write you because there is a certain pessimistic strain running throughout the article on account of the class of establishments which the writer of the article evidently believes are typical of the automobile industry.

For the past eight or nine years I have been engaged in the automobile business in Shreveport, and one of the things I have always tried to do was to promote a better feeling among automobile dealers, and to use my best efforts in putting the automobile business upon a higher plane, at least, in the territory which we serve.

This is not the first time Motor World has heard from me on this and kindred subjects, but I believe I am justified in writing you this time if I succeed in getting this letter in the hands of the

St. Louis, Mo. \_\_\_\_\_

We are of necessity BACK ORDERING the following goods, either from a new or back order being shipped you.

Any items not mentioned are being shipped promptly.

#### REMEMBER

UNLESS YOU INSTRUCT TO THE CONTRARY WE WILL

POSITIVELY SHIP WHENEVER WE CAN, REGARDLESS OF HOW LONG IT TAKES. USE OUR OWN JUDGMENT AS TO SPLITTING SHIPMENTS, CHANGING ROUTING, ETC. EXPECT YOU TO PAY ALL TRANSPORTATION; IN NO CASE CAN WE PREPAY BACK ORDERS.

EXPECT YOU TO KEEP AND PAY FOR THE GOODS IF FOR ANY REASON YOU FAIL TO CANCEL.

The following items will be shipped direct from the factory

The following items are either out of the market or will be so long delayed that we are unable to make promise, and are cancelling:

FRED CAMPBELL AUTO SUPPLY CO.  
1109 Locust Street

(OVER)

### Think a Moment Before Cancelling This or Any Other Back-Order Now in a Jobber's Hands.

You must have had confidence in your jobber to have sent him the order at all. Then, follow out that confidence and let him ship it all as soon as he can and save for both of you detail, expense and loss of profit.

All responsible jobbers have their orders in with the factories months and sometimes years ahead. All of them are also getting shipments from said factories right along but not enough. Good jobbers fill all back orders in order of receipt—meaning, when you cancel with one you simply take a later place in the line of the next. Nine times out of ten when your jobber back orders, any other jobber would have done the same. There are dozens of articles not a jobber in the country has had in actual stock for years. Such goods must be back ordered; they can be procured no other way.

The remedy is for the dealer to do as the jobber has already learned and order ahead of his requirements—then, wait until shipment can be made, knowing that his jobber will have the goods as soon as anybody and will ship each order in its turn. No jobber worthy of the name will put a shipment in stock or fill immediate orders from it before carefully going over all back orders to see if any can be shipped from same.

Again let us say, wherever your back orders may be, let them stand. It is the surest, the cheapest and, sometimes, the only way to get the goods.

FRED CAMPBELL AUTO SUPPLY COMPANY.

Jobbers' back-order blank used by the Fred Campbell Auto Supply Co.

man who wrote the article referred to. I have found that the successful automobile dealer possesses very much the same qualifications which would be necessary to his success in most any other line of business and that there is as much if not more room for the display of originality in our business as there is in any other line.

We had the first building in Shreveport which was built expressly for the purpose of selling and giving service on cars. The building was of concrete and steel, constructed without a post. The ground floor was 80 x 150 ft. and many people predicted that it was much too large for any business that we would ever be able to build up in the community. If I had given serious attention to the note of discouragement which ran through the conversations of many of my friends, I would finally have come to their belief, and would have failed to make the investment pay, but because I did not believe them, our business grew so large that the building was too small in six months time.

About a year ago Motor World carried an article and pictures covering the new building which we now occupy. Our growth has been rapid because we believed in the future of the automobile business and spent money freely to develop it.

The picture post cards enclosed are added proof that our policy is consistent. We believe the automobile business is a good business. We have invested money

in it freely because of this belief, and feel that we have, at least to some extent, made it a better business in this community by believing in it and using our best efforts to convince others that it was a good, honest, legitimate business.

Because this spirit prevails generally among automobile dealers in Shreveport, Shreveport is the largest automobile distributing center in the state, and probably the largest within a radius of 350 miles with the exception of Dallas, Tex. A glance at the map would indicate that New Orleans was the logical distributing center for this territory but such is not the case; this is an instance of where population does not make the town. Aggressive dealers are responsible for the large automobile distributing business which Shreveport enjoys.

I believe the man who wrote the article had recently been thrown in the company of men who were not representative dealers. At any rate they were not representative of the class of dealers we have in Shreveport. Motor World is the only motor paper that I read regularly and I always enjoy it. I enjoy it so much that I will always take issue with any man who writes an article for it and suggests that the automobile business is not as good and as well conducted as the business of any other line. Very truly yours, Wray-Dickinson Company, Inc., Shreveport, La., George D. Wray, President.

You may rest assured that you will

never offend Motor World by writing letters telling what you think about the paper and the stories that are in it, no matter whether your opinions are favorable or adverse.

Regarding the particular story you mention, we wish to emphasize the point that perhaps has been overlooked, which is that this story referred to the garage-man and accessory dealer, and not to the regular automobile dealer, who in a majority of cases has a pretty good place of business, and follows pretty fair methods. We don't think there is anything particular in your letter with which we disagree, and we don't believe you will disagree with us once we make this point plain.

This story was written for the benefit of the accessory business, and not for the car selling business. The accessory selling business is one which has lagged very far behind, and those engaged in it are now beginning to pay earnest attention to its development. It is a big field and a big job, and yourself and the other people in your city are to be congratulated on the better business work and trade development you are doing. Of course, where your car dealers are also the accessory dealers, better conditions probably exist than are mentioned in this story, but in the average run of garages, where accessories are sold and cars are not merchandised, conditions are not all that might be desired, although we believe they are going to be within the next few years.—Ed.

## Why the Average Mechanic Needs Encouragement

Editor Motor World: Your editorial in May 29 issue gives me the opportunity to swat the garage and service station managers—at least most of the ones I have met.

Any one can find fault, and it is much easier to *criticise* than to *perform*, but—

There seems to be so much harping on the shortage of repairmen that there must be a reason. Let us analyze the situation carefully and find the cause for all this unpleasant effect.

For concrete examples, I shall give my own observations and experiences, as they can be duplicated by hundreds of mechanics and foremen all over the United States.

A mechanic hired out as a first-class repairman at fair wages. When requested to do some lathe work he replied that he was not a machinist. They told him he had misrepresented himself and they canned him. Now tell me: *What is a first-class A1 mechanic?*

Must he be an A1 machinist who has served 4 years apprenticeship and one or two as journeyman? Offers in daily papers for such men are at 55 cents to 70 cents an hour.

Must he be a first-class electrician? Several more years for which he can get up to 70 cents an hour. Must he be able to do all kinds of welding and braz-

ing, straightening, etc.? A good solderer, fender straightener, body and top man, good rear axle man, transmission, engine, bearing scraper, carburetor expert, etc.?

Now let us see—about six years at machinist trade—five at electrical work, including batteries—three at welding—ten years on all classes of automobiles—*twenty-four years' experience* for which some *dub of a manager* offers 40 cents to 60 cents an hour? Oh! it's a *great life* if you don't weaken!

And this manager? How much *experience* has he had? *What has he done* to become manager? Secured a legacy from some one's death perhaps. Maybe he has a strong line of *plaid, every day* *bull*. Forms a stock company and gets himself the job of manager.

I see ads in daily papers for *laborers* at 50 cents an hour. Young lads of 18 are working in the mines running a motor at \$5 for eight hours—62½ cents an hour. But a man with from *fifteen to twenty-five years' experience* in the automobile line is offered 50 cents an hour. *Who is to blame, the repairman or the manager?*

I have had many letters from repairmen and foremen complimenting me on my articles in Motor World. They tell me I *hit the nail on the head*; that I

cannot be *honestly criticised* for my statements, *because they are facts*.

A year ago I quit my former job because I became disgusted with conditions. I will not work where I cannot have a real interest in the place. Not *financial*—but *personal*.

As soon as it was learned I was working on notice a shop proprietor sent for me. I hired at a 15 per cent increase in pay. They had *no system—no cards—no check* on money drawer or on money coming in or going out. No regular time to go to work, or quit, no *tools—no equipment*—nothing but dirt and rubbish and supplies scattered over the floor. *Drifting with the current*—breaking even perhaps, *nothing more*. I was made foreman of the repair shop.

I bought from salesmen regularly until I had a complete stock of lock washers, cotter pins, copper wire, copper tubing, insulated wire, nuts, bolts, white lead, prussian blue, sandpaper, emery cloth, rivets, etc., etc. I placed these on shelves, which I had previously cleaned, in an orderly array.

I bought tools, such as Weaver press, three-wheeled twin jack, extra jacks, creepers, adjustable end wrenches, Stilson wrenches, flat double end wrenches, twist drills, reamers, socket wrenches, two sets of U. S. and A. L. A. M. taps

and dies, large and small machinist hammers, large and small riveting hammers, screwdrivers of all sizes, emery wheel dresser, etc., etc. We swept and cleaned and hauled out junk by the bushel basketful. We finally had a stockroom built on the mezzanine floor back of the office. It is full and overflowing. We put up a building for storage, and built a large wash stand, leaving our repair-shop free from storage cars.

We have a regular time to start and a time to quit. We have a large wall clock where every one can see it. A desk for time cards, holders for job cards, which are hung upon each job from the time it enters until it leaves. They are in triplicate. We finally got a sign, "All repairwork strictly cash!"

It is a stock company, and I overheard one of the stockholders tell the proprietor that he thought we were doing finely, considering all we had bought. "Why," he said, "we've made 6 per cent in the past six months!" Then he saw me and shut up. He blows about me and my ability, and what I've done since I came in to the shop. But I had to talk *two weeks' notice* this spring to get my raise. *What's wrong? Why blame it all on the poor repairman?* I got a fair raise, 20 per cent—not what I should have—and here is *why*:

*The proprietor is a fine, strictly honest, likeable man, who spends two-thirds of his time in the repairshop, doing repair work. He comes to my tool-kit, as do all the others, and takes my tools, uses them, lays them down all dirty and greasy, and I spend perhaps one hour a day hunting for my own tools and cleaning them up.*

Before we went on a cash basis I did a fifty dollar job, for which we've never been paid. I wrote to a good lawyer friend of mine for advice—and spent a dollar of my own money. He informed me we could replevin the car. I showed the letter to the proprietor, who seemed pleased, but *did nothing to collect*. Later the customer called for more work and promised to pay cash for it, also to settle the other bill as soon as possible. The proprietor let him go, *without paying*, a second time. *Who loses? The repairman—and that's me. Also my family, also Uncle Sam. That one job would have paid me ten dollars a week more money for six weeks. One \$50 Liberty bond lost by poor management.*

I have all the most difficult particular work to do; see that the jobs go out in their order; talk to customers about their jobs, and arrange a date to do their work; see what new tools we need, and make or order them; see that we have sufficient supplies on hand and tell the proprietor when and what to order. Then he forgets, and we run out.

A few weeks ago we ran out of cylinder head gaskets. I had told him to order them at least a half dozen times. One of our customers blew one and we were out. He needed his car badly and I spent a half day trying to doctor the old one, so he could use his car. But I could not make it hold.

The proprietor said, "Make no charge

for your time as it was my fault for not ordering sooner." *Who was to blame? Who loses? Why?*

I could fill pages and pages but what's the use. I should get at least eight dollars a week more money, and if properly managed, the garage could pay me and still make more profit than they do.

I have to *sweep or wade*—answer 'phone calls, wait on trade, do work the helper should do, but fails to do, because of inability and lack of initiative. Yet they pay him for sticking around instead of paying me for doing the work.

They charge customers the same rate for all of us. The next man under me has had less than three years' experience. Is that *treating the customer square?* They pay him a few dollars less a week than they pay me—just a few. He is learning all he can from me, leaving his work many times a day to come and see how I locate certain troubles, etc. Yet the proprietor who sees this says nothing. Is that *treating me right?*

Who is keeping the shop going, financially speaking? *Who benefits?* What do I get for twenty years experience as machinist, electrician, road tester and repairman? Not as much as the boys who operate motors in the mines. Yet I spend my nights reading, studying,

thinking, while they spend theirs in the pool rooms and theaters. *Any inducements for them to become repairmen?*

As A. L. Bennett states in a recent letter, "He could get and keep all the help he needed if he paid the right wages, made helpers do helpers' work, let the mechanics do mechanical work and CHARGED ACCORDINGLY."

If any reader dares to even think I have the wrong idea, let him carefully peruse Ben S. Brown's article in the May 22 issue of Motor World, page 6, first column. It says: "Simon spent \$1,000 in installation of minor helps to operation. In two months the \$1,000 was saved, production doubled and men's wages raised twice. That was real business management and the workmen gained by it. Poor managers have poorly paid help. It is the worker who loses."

Now let these managers, who are standing around waiting about the lack of good automotive mechanics, stop howling and clean up, put in tools and equipment, get a system and use it. Have a sliding scale of prices for repair work and pay the men according to what they know and CAN DO. In other words, let them use more brains and less noise. and they'll find plenty of good men—perhaps right in their own town—maybe in their own shops.—C. R. PIERSON.

## Making Salesmen Pay for Rash Promises

L. CHAPMAN, service manager for the Overland Automobile Co., St. Louis, found a way of breaking salesmen of offering too much service in the sale of a car.

In a conversation about the "war service rules" it was suggested that a good many salesmen would have to curb their offers of free service, now that the car owner was going to meet a stranger at night and on Sunday and would have to pay for all work done, regardless of promises.

"That will not make any difference with the Overland," said Chapman. "The salesmen here do not promise anything except what the makers of the cars put in print."

"Isn't that unusual?" he was asked.

"Perhaps it is, but it came about this way. I got tired of doing work on cars that had been on the road for weeks and not being able to collect for it. It made the service end look very cheap. So one day I went into the sales meeting and told the men just what should be promised and what should not. It took a much longer time to tell them what not to promise than it did what they should promise. You see, the manufacturers write out the promises and there really was no use in telling them about it, but I did. I also told them to remember the date."

"A few weeks later a car was driven into the shop in bad shape because the grease was out and had been for some

time. We put in new grease, got the car to running again and the man on the job asked for his money. The owner refused to pay and he was brought into my office.

"It was the old story. He said: 'The man who sold me this car said that it would not cost me a cent for upkeep except for gasoline for three months and so, of course, I am not going to pay you.'"

"I asked the date of the car purchase, and it was after the day I had talked to the salesmen. So I called the salesmanager, learned who sold the car and had him sent over. When he came it was something like this:

"'Mr. Grady, I have a bill here of \$2.50 that you must pay before Mr. Bill Jones here can take his car out of the shop. You see, Mr. Jones says that you promised him that this car should not cost him a cent for three months, and so he ran it without grease until it stuck and then came in to have it fixed and some new grease. Now someone has got to pay before that car goes out. Who is it, you or Mr. Jones?'

"After something like that I left the two to settle it. There was, of course, a good deal of argument, and in the end I decided that Mr. Bill Jones had the best of it and I charged the bill to Grady's account."

"It had taken so long after the date set to get the first car in the shop that some time had been lost, so we had some other rounds like this one, but after we had collected several of those bills from the salesmen, it became perfectly safe to trust them as to promises."

The editor of this department is glad to answer questions. In sending queries, always include copies of contracts, notes, etc., to which you refer.

# THE LAW

By George F. Kaiser

As It Applies to  
Dealers  
Repairmen  
Garagemen

## Rights of Pedestrians

Editor Motor World: What are the rights of a pedestrian, and also what cause for action has he, and against whom, when it develops that the driver of the car is not the owner, and further, that he was driving without a driver's license?

The facts are these: A party was walking along a country road and was struck by an automobile coming from the rear, thrown to the right of the road, with the result that he sustained a compound fracture of the ankle and was injured internally, the ultimate result of which is still in doubt. The automobile was going at a speed doubtless exceeding the law, as it was not brought to a stop after the accident for 200 ft. or more. This accident happened in New Jersey.—A. W. Baldwin, Newark, N. J.

Answer—Of course you can proceed either civilly or criminally or both. It is a misdemeanor to drive without being properly licensed. An injured person may sue the car owner for damages if it was under his control or if it was being used on his business at the time of the accident. If the car was not so used civil suit for damages should be instituted against the driver if the injured party wants to bring suit.

## Liability of Chauffeur

The New York Court of Appeals, which is the highest court in New York State, has just reaffirmed the doctrine of the case of Raily against Connable in which it was decided that a motor car owner is not responsible for injuries caused by the negligence of a chauffeur unless the chauffeur is acting within the scope of his duty or on his master's business at the time of the accident. In this last case, a chauffeur was taking a friend on a personal errand so the master was held not to be responsible.

This case is not at all in accord with recent decisions in the courts of some of the other states which hold that a man is practically always responsible for damages caused by his car at the time unless it has been stolen from him.

## Can't Hire Contract Employees

That damages may be recovered from a competitor who induces an employee to break his contract of employment is the decision in a recently decided case.

The employee was under a contract

which he was induced to break for an increased salary. His employer brought suit for \$25,000 damages. The court said that a contract is a property right and any interference with it is wrong in morals and when the interference is without excuse or justification damages can be recovered.

It further said that if a person knowingly and intentionally interferes with the express contract rights of an employer with his employee and the purpose and intent of such interference is to injure the employer, and it does injure him, he can institute an action for damages.

## Lien Is Doubtful

Editor Motor World: Can we hold a car for repairs under the following conditions:

The car was sold by another party under a contract which reads, "All moneys paid in to be as rent on same until final payment is made."

The purchaser brought the car to us for repairs which have been made. Now he wants to let the car go back to its original owner and forfeit payments made. The original owner, however, did not order or authorize the work done.

We are under the impression that the workmen's lien law of Michigan protects us on work and parts put on this car.—V. B. Goshorn, Yeaky-Goshorn Auto Co., Otsego, Mich.

All garagemen who furnish labor, gasoline or supplies by express or implied contract have a lien on all motor cars, etc., stored, maintained and supplied or repaired or furnished with gasoline, electric current and accessories when these things have been furnished at the request or with the consent of the owner. The vehicle may be detained at any time within 90 days after the last item of material was furnished.

Dealers may advertise if they are not paid within 90 days after serving a claim of a lien and an itemized statement of the account and can then sell the property as at a chattel mortgage sale. Dealers must comply with all the laws of states, cities, towns, etc., to avail themselves of this lien law (Michigan, 1915, Law).

Answer—I know of no decision in your state as to whether a garagemen's lien is preferred over a conditional bill of sale.

I am afraid that you will find that the rights of the seller under the conditional bill of sale will be held to be superior to

your rights, because your state has always looked upon conditional bills of sale very favorably, although the courts of numerous other states have decided that a garagemen's right under the various lien laws is superior to the rights of the holders of conditional bills of sale.

## Boss Not to Blame

It was decided in a recent case that where a chauffeur is injured by the explosion of a percussion cap brought into a garage, where he was working for his employer, by another chauffeur who was experimenting for his own curiosity, the injury did not arise "out of his employment" even though the other chauffeur was employed by the man for whom the injured man worked.

## Partnership Can't Sue

In one recent case where a debt was owing to a partner, it was found necessary to institute suit. Instead of bringing suit in the individual names of the members of the partnership suit was brought in the partnership name. The court decided that the suit was improperly brought because a partnership cannot bring or defend a suit but the individual members composing the firm must either institute actions in their own names or defend them in their own names for the partnership.

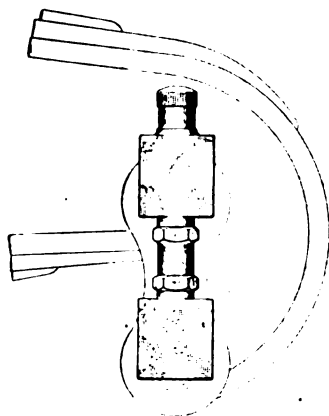
The above is also true where suit is to be brought or defended by a person doing business under a trade name. The action should not be instituted or defended under the trade name but should be brought or defended by John Smith or whatever the man's name may be, "doing business under the trade name or style of Superior garage" or whatever the trade name is that he does business under.

## Can't Have Cake and Eat It Too

In another recent case where a person agreed to purchase a chassis and made a deposit to be returned if the seller failed to fill its contract, and the seller agreed to take the buyer's old car if it was in good running order and give him a thousand dollars for it, it was held the buyer could get back his deposit if the seller broke his contract, but he could not keep his old machine and also get back the thousand dollars unless he could show that it was in good running order.

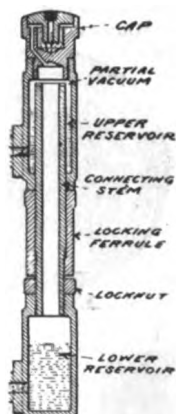


# Accessories



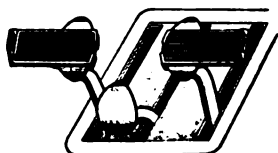
## MECKEL SPRING BOLT LUBRICATOR

These automatic oil spring bolt lubricators are secured at the side of the shackle and lubricate both the upper and the lower bolt. The sectional view shows the construction of the lubricator. Following is the method of fitting it: First the double or shackle bolt lubricator is taken apart; the lower end is put on, care being taken to have the screw threads engage perfectly. The lower one is allowed to hang with the opening downward so as to allow plenty of room for the upper reservoir to turn in when screwing it on the bolt. After both reservoirs are screwed on firmly the connecting stem is inserted to see that the openings are straight up and down. If both reservoirs register perfectly the connecting stem is drawn out far enough to allow of sliding on a washer and screwing on a large ferrule and the lower nut and finally placing on a washer. Then a screwdriver is inserted into the top reservoir and into the slot in the stem. While holding the ferrule and nut so that they will not turn the stem is screwed down as far as it will go. Next, the upper ferrule is turned up against the upper washer and the nut down against the lower washer. The ferrule and unit prevent leakage of oil. If leakage of oil should occur through the bushing owing to wear of same and of the bolts, some cotton waste should be put into the oil reservoir or felt into the small outlet to restrict the flow of oil.—Meckel Lubricator Co., Lakewood, Ohio.



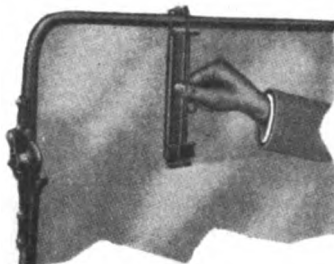
## INTERNATIONAL SIDE TIRE CARRIER

A runningboard bracket with a self-latching hasp which may be secured with a small padlock. It will carry either one or two tires with or without demountable rims. Price \$2. Packed 10 in a carton.—International Stamping Co., Chicago.



## UTILITY SURE GRIP PEDAL FOR FORDS

Pedals made of pressed steel finished in black baked enamel and equipped with heavy pads of rubber edged with metal. Can be attached instantly without drilling or using special tools, the tightening of a single nut being all that is needed to retain them securely in place. Price \$1 per pair.—The Hill Pump Valve Co., Archer Avenue and Canal Street, Chicago.



## CLEAN-ALL CLEANER

A windshield cleaner of sliding type which allows the shield to be opened or closed without interfering. It is made of non-rusting material, is rattle-proof and is so installed that it is always within the driver's reach. Price \$1.50.—Clean-All Windshield Corp., 257 Washington Street, Buffalo.

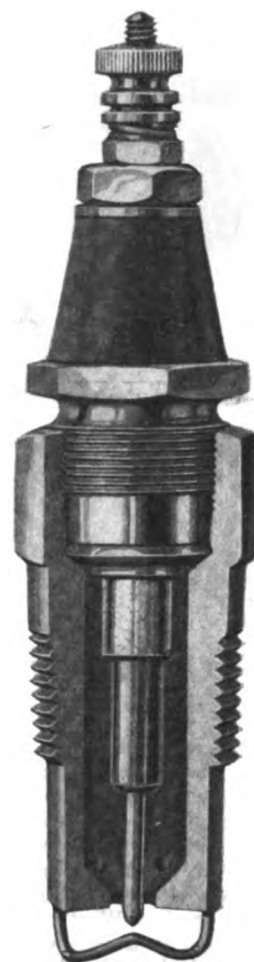
## BENFORD GOLDEN EAGLE SPARK PLUG

A new design of spark plug, especially adapted for use on tractor and truck engines, has been placed upon the market by the Benford Mfg. Co., Mt. Vernon, N. Y. It is of substantial construction and an extensive test, covering 17,000 miles in a tractor engine, has shown it to be well adapted for the purpose for which it was designed. The Golden Eagle plug is being made in eight different sizes, viz.,  $\frac{1}{8}$  in. regular,  $\frac{1}{4}$  in. regular, metric,  $\frac{1}{8}$  in. long,  $\frac{1}{2}$  in. long,  $\frac{3}{4}$  in. long, and  $\frac{1}{2}$  in. extra long. This large assortment of sizes permits of meeting the requirements of different engines.

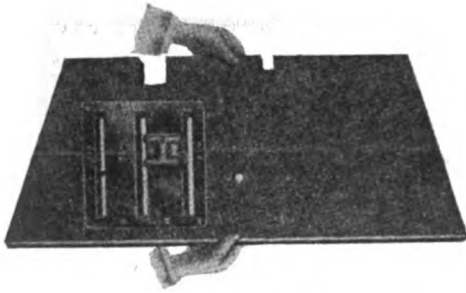
The Golden Eagle plug is of the mica-insulated type. There is an inside layer of sheet mica, wrapped tightly around a tapered rod. By a special method employed it is possible to wrap the mica tighter around the rod than is usually the case, and it is claimed that at least one-third more mica is gotten into the same space than by the ordinary method. This extra tight winding of the mica is claimed to prevent short-circuiting by oil. As is well known, when the mica is loosely wound, oil will seep into the interstices and soak through the mica core, thus short-circuiting the plug.

To the bottom of the tapered central rod is welded a pure nickel electrode, and a pure nickel side electrode runs from one side of the shell to the other, this latter electrode being curved around the central electrode in V fashion, the same as in the Golden Giant.

The bottom of this plug is closed by what is generally referred to as a "baffle plate." There are four holes in this baffle plate, through which the combustible charge and the burning gas can pass in and out respectively. The object



of the baffle plate is to keep oil out of the spark plug chamber, preventing fouling. It is also claimed that the baffle plate confines the heat to the spark plug chamber and that the resulting high temperature will burn any oil that may get into the chamber, thus making carbonization impossible. Only one gasket is used. This is  $\frac{5}{64}$  in. thick and is made of copper. The retail price of the plug is \$2.

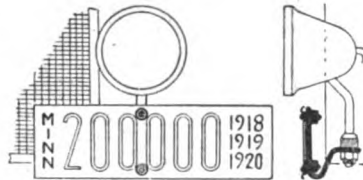


**MIDWAY FRONT LICENSE  
BRACKET FOR FORDS**

A bracket made of heavy gage steel, finished in black enamel. Comes complete with bolts and washers, packed in cartons holding one dozen. Price \$3 per carton. — Midway Mechanical Co., 1555 Selby Avenue, St. Paul.

#### MASTERS GASOLINE METER

A gasoline meter for use in conjunction with the Stewart vacuum fuel feed system. The instrument is mounted on the cowl or dash and from it a small copper tube leads to the Stewart tank. Each time the tank fills and empties it forms a vacuum which operates a piston in the meter. For every 36 fillings, equal to a gallon, the meter indicator adds one, thus showing the gallons consumed from the time the meter is installed. Price \$8.—Irwin W. Masters, Muncie, Ind.



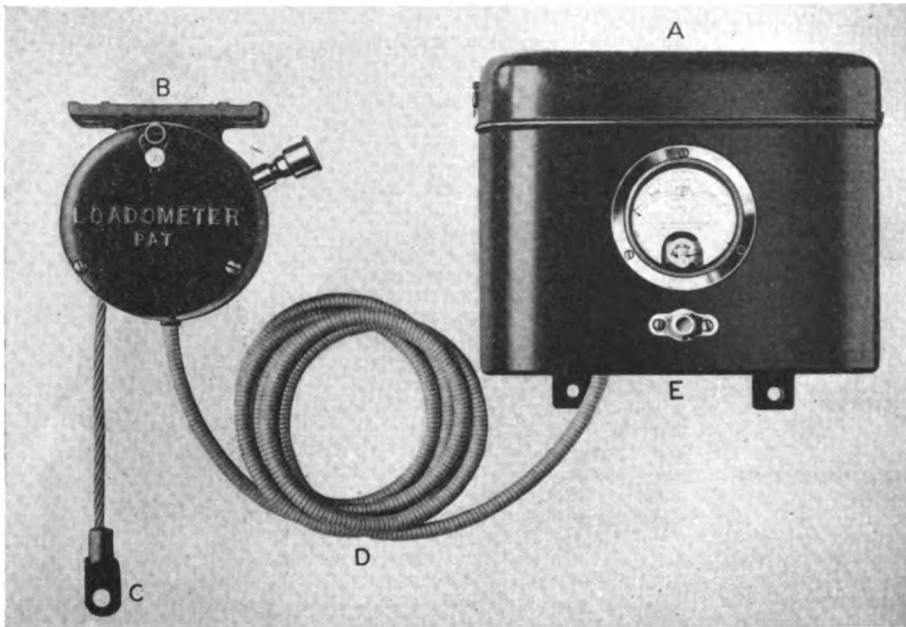
#### MIDWAY PORTABLE GREASE CABINET

Made in two styles to deliver  $\frac{1}{4}$  and  $\frac{1}{2}$  lb. per stroke respectively. Will handle oils, semi-fluid grease or heavy transmission grease. Container is of heavy tin and has a capacity of 20 lb. The cover is dust-proof and the grease openings in the valve are controlled by a single ball. A baffle washer keeps air from the pump, hence practically all the grease can be forced out. Price \$7 and \$11. —Midway Mechanical Co., St. Paul.



#### MIDWAY FLOOR BOARD HOLDER

A device designed to hold the floor boards in place, preventing their sliding and interfering with the operation of the pedals. The board can be removed easily when desired. Price 25 cents. —Midway Mechanical Co., 1555 Selby Avenue, St. Paul.



*Complete Loadometer equipment: A, pressed steel box containing two dry cells and the Loadometer; B, controlling rheostat; C, cable between rheostat and axle; D, flexible conduit for wiring; E, button*

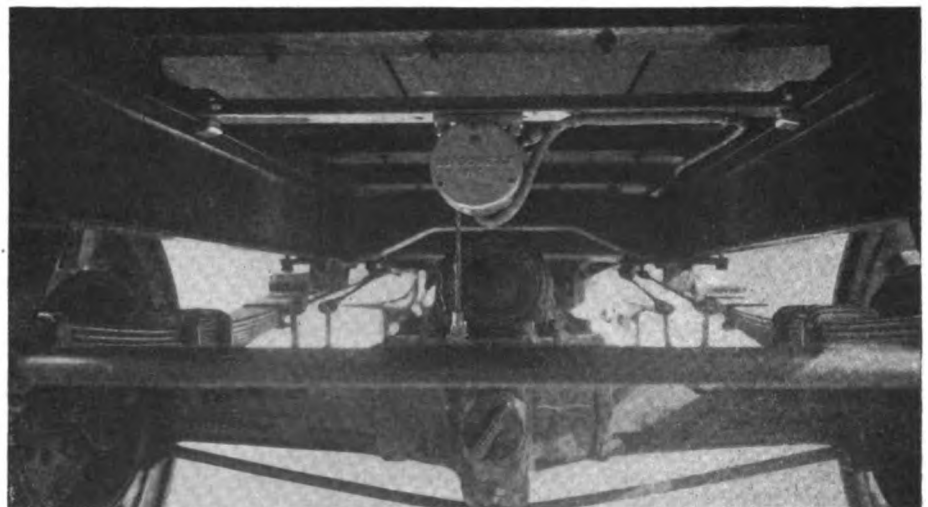
**T**HE Loadometer Co., Industrial Building, Baltimore, is placing on the market a device which is placed on the dash of a truck to indicate the exact load carried by the vehicle. The device is electrically operated and, in brief, consists of a rheostat which is bolted under the car and a Weston ammeter, which is enclosed in a case with two dry cells and attached to the dash.

The controlling rheostat (B) is bolted to the body or frame of the truck over the rear axle and the cable clip (C) is fastened to the axle. Between the rheostat and the ammeter there is a flexible cable (D). A spring within the casing that holds the rheostat maintains the cable between the casing and the axle taut. As the body of the truck descends under the weight of the load, the spring takes up on the cable, permitting the arm of the rheostat to sweep over a number of contacts, reducing the

resistance in the line between the battery and the ammeter.

For example, when the truck is empty, the rheostat interposes the maximum resistance between the battery and the ammeter. As the truck is loaded and the body descends, the resistance is decreased so that a higher reading is given on the ammeter. The ammeter is calibrated to read in pounds so that if a 500-lb. load is put on the truck this weight will be shown by the Loadometer when the button (E) is pressed.

Current is applied by two dry cells which are carried in the present steel box that holds the Loadometer. As current is used only momentarily, the dry cells will last for long periods. The device is intended to indicate overloading, and when once calibrated to a particular truck will remain accurate indefinitely. Adjustments are simple and the only moving part is the rheostat arm, which is lubricated by a felt wick. The price, installed, is \$95.



*Loadometer installed under the chassis of a Mack truck, showing the method of attaching the equipment*

# Concentrate on 9 Tire Sizes

## War Industries Board Reveals Plan of Gradual Elimination Covering 2½ Years—Tire Makers, Car Makers and Tire Dealers Pleased

NEW YORK, July 1—The finally completed program of the War Industries Board to eliminate all but nine standard sizes of pneumatic tires and concentrate on straight-side types except in two cases, is viewed with nothing but jubilation by both tire manufacturers and tire dealers. The nine sizes which are to be made will provide plenty of variety to equip all sizes and styles of passenger vehicles and also light delivery vehicles.

It is the plan of the War Industries Board gradually to eliminate a great number of odd sizes for which there has been little call and for which substitute sizes and types are readily available. Thus, for example, some 10 sizes in little demand are to be discontinued Nov. 1, 1918; four more will be eliminated Nov. 1, 1919; and nine more on Nov. 1, 1920. There seems no reason why this gradual elimination should impose hardships on either tire makers, tire dealers or the owners of cars. Following are the sizes that are to be continued without change:

CLASS A	
(Plain and non-skid treads)	
Size	Rim
30 x 3½	Clincher
32 x 3½	SS
31 x 4	Clincher
33 x 4	SS
34 x 4½	SS
35 x 5	SS
36 x 6	SS
38 x 7	SS
40 x 8	SS

The following sizes are to be discontinued Nov. 1, 1918:

30 x 3½	SS*
32 x 3½	QD*
32 x 3½	CI*
33 x 4	QD*
33 x 4	CI*
35 x 4	SS*
29 x 4½	SS*
32 x 4½	QD*
33 x 4½	QD*
36 x 4½	QD*
36 x 4½	SS*
34 x 4½	QD*
37 x 4½	SS*

The following sizes are to be discontinued Nov. 1, 1919:

33 x 4½	SS**
36 x 4½	SS*
35 x 4½	QD*
37 x 5	QD*

The following sizes are to be discontinued Nov. 1, 1920:

30 x 3	CI*
32 x 4	SS*
34 x 4	SS*
32 x 4½	SS*
33 x 4½	SS*
35 x 4½	SS*
33 x 5	SS*
35 x 5	QD*
37 x 5	SS*

\*Non-skid tread.

\*\*Plain tread.

Although the number of sizes and types to be eliminated is considerable, the list has been carefully worked out and for each size or type done away with there remains one which can be substituted for it. Thus, for example, where a QD size is eliminated, a Straight Side size remains and this can be used on QD rims by the addition of a bead filler strip.

Similarly, where a size has been eliminated in both Straight Side and QD, it is quite possible to use what heretofore has been termed an oversize.

The effect of the standardization on nine sizes will be to reduce very greatly the machinery required in tire making. Tire makers will be able to concentrate on a few sizes and turn these out in correspondingly greater quantities. The action should operate to eliminate shortages in certain sizes which have become prevalent of late.

On the side of the tire dealer, the action is excellent. It permits him to stock only nine standard sizes instead of a much greater number that always has been necessary heretofore. It is estimated that by the time for the elimination of certain sizes, car owners will have anticipated to a sufficient extent to permit the change being made without difficulty.

Although nothing specific has been said about it, it is understood that the order is to apply to both fabric and cord tires.

That the move to standardize sizes is quite agreeable to car manufacturers is evidenced by the fact that both the National Automobile Chamber of Commerce and the Society of Automotive Engineers have signified their approval of the plan.

## Makes and Models of Cars Affected

### Tires Discontinued Nov. 1, 1920

30 x 3 (Clincher)		
Year	Car	Model
1913 to '17	Ford	T
1913 to '17	Metz, 22 H.P.	
1915-16	Monroe	M-2
1917-18	Saxon	B-5R, 4-cyl.

32 x 4 (Straight Side)		
Year	Car	Model
1916-17	Abbott	Touring
1916-17	Abbott	Roadster
1916	Abbott	Speedster
1918	Auburn	Sport
1914	Case	R-25
1916	Chalmers	6-30 & 35A
1917	Chalmers	35 (6-30)
1918	Chalmers	Roadster & Cab
1918	Chandler	"17" Sport
1918	Douglas	Speedster
1917-18	Economy	C-8-48
1918	Elgin Six	All models
1916	Eger	12
1917-18	Franklin Series 9	Open cars
1915	Glide	30
1918	Hollier	208
1918	Hupmobile	All models
1916	Jackson	34, 348
1917-18	Jackson	350
1918	Jordan	Sport Marine
1916	Kisselkar	6-38
1916	Lexington	6
1917	Liberty	10
1916	Liberty	10-A
1917-18	Liberty	10-B
1916	Marion Handley	6-40
1917	Marion Handley	A-6-40
1916	Mitchell	D-2-40, D-5-40
1917	Mitchell	D
1918	Mitchell	D-40 Open
1917	Monroe	M-4, M-5
1917	Nelson	All models
1917-18	Oakland	34
1917	Oldsmobile	37, 6-pass.
1917	Overland	85-T, 85-C, 85-R
1917	Overland	85-6-C, 85-6-E
1918	Overland	85-6-B
1915	Palge	6-36
1916	Palge	6-38
1917	Palge	6-39
1918	Palge	6-40
1916	Paterson	6-42
1917	Paterson	6-45, 6-45R
1918	Paterson	6-45
1916	Pennsy	R
1917	Pennsy	8
1916-17	Pilot	6-45
1918	Pilot	6-45
1918	Sayers	All models
1917	Stearns	SKL-4 Closed
1917	Stephens	60-67
1918	Stephens	70-75
1918	Studebaker	EH-Little 6
1916	Velle	22-40
1917	Velle	28

34 x 4 (Straight Side)		
Year	Car	Model
1913	Allen	36
1915	Abbott	K-11
1918	Abbott	All models
1913	Ames	Light 4
1913	Apperson	4-45 & 4-55
1914	Apperson	Light 4-45
1915	Apperson	6-45 & 6-48
1916	Apperson	4-40
1916	Apperson	6-16
1917	Apperson	6-17
1918	Apperson	8-18
1915	Auburn	6-40
1916	Auburn	6-38
1917	Auburn	6-39 & 6-39C
1918	Auburn	6-39B
1913	Buick	
1914	Buick	B38, B37
1915	Buick	C-36 & C-37
1916	Buick	D-44 & D-45
1917	Buick	D44, D45
1918	Buick	E44, E45, E46, E47
1918	Case	N-30
1915	Case	R-25, R-30
1916-17	Case	All models
1914	Chalmers	26 (L-6)
1915	Chalmers	32 (6-40)
1916	Chalmers	6-40 & 32B
1917	Chalmers	35 (6-30)
1918	Chalmers	7-Pass.
1915-17-18	Chandler	15-16-17-18
1917	Chevrolet	15-16-17-18
1917	Crescent	40
1915	Davis	38A
1916	Davis	6-C, F, G
1917	Davis	6-H, 6-I, 6-K
1918	Davis	H-I-K & L
1918	Douglas	5-P., Tour Rdstr.
1917	Drummond	17
1916	Empire	60-70
1917	Empire	70-A, 71
1918	Empire	70-A, 73
1915	Eger	6-50
1914	Fritchle (Elec.)	
1916-17-18	Glide	36-42
1917	Glide	6
1914	Halladay	6-40
1915	Halladay	6-40, O, RA
1916	Halladay	All models
1917	Halladay	R.A.C.-64, Roamer
1914	Haynes	28
1915	Haynes	30, 32
1916	Haynes	34
1917	Haynes	36
1918	Haynes	38
1915	Herrf-Brooks	4-40, 6-50
1916	Herrf-Brooks	1-16-50
1913	Herrshoff	6-36
1914	Herrshoff	6-40
1916-18	Hollier	6-40
1916	Hollier	178
1915	Hupmobile	K
1916	Hupmobile	5
1917	Hupmobile	N4
1913-14	Imperial	34

Year	Car	Model
1914	Imperial	32-33
1913	Jackson	"Olympic"
1914	Jackson	"Olympic" 40
1915	Jackson	48
1916-17-18	Jackson	34-9
1914	Jeffrey	4-93
1915	Jeffrey	4-93-2
1916	Jeffrey	"Chesterfield"
1917	Jeffrey	4-462
1917-18	Jeffrey	All models
1914 to '16	Jones	Rdstr. & Tour.
1917	Jones	D. E
1916	King	All models
1917-18	King	4-36, 6-42
1915	Kisselkar	6-42 (5)
1916	Kisselkar	100 Point Six
1917	Kisselkar	6-42
1918	Kline	6-38-F
1915	Kline	6-38-G
1916	Kline	All models
1917	Lexington	Four, 61
1918	Lexington	6-N
1918	Lexington	All models
1914	Marion	B-5
1915	Marion	All models
1916	Madison	All models
1917	Madison	T, T-7
1918	Madison	All models
1915	Mason	C
1916	Meteor	42
1915	Mitchell	B-2-35, B-5-35, B-6-35
1916	Mitchell	8, 6
1917	Mitchell	42
1918	Mitchell	C-42 Open
1915-16	Moline	40
1917	Moline	MK-40-C
1914	Moon	42
1915	Moon	4-38, 6-40
1916	Moon	6-40
1917	Moon	6-43
1918	Moon	Six 45
1918	Nash	All models
1917	Oldsmobile	45, 7 pass.
1915	Overland	80T, 80R
1913	Paige	4-36
1914	Paige	4-36
1915	Paige	4-36
1916	Paige	6-46
1917	Patterson	6-48
1915	Peerless	54-DD, 55E-5
1917	Pennay	T
1915	Pilot	55
1916	Pilot	6-55
1913-14-15	Pratt	4-40
1914	Reo	5-S, 5-R5
1914	Reo "Fifth"	All models
1915	Reo	8-T, R
1916-17	Reo	R, S
1916	Richmond	H-5-60
1916	Roamer	R.A.C. 64, R.A. 64
1917	Roamer	All models
1915	Rose	A, C
1916	Ross	SKL-4, Open Body
1917-18	Stearns	Four
1916-17-18	Studebaker	Six*
1916	Studebaker	All models
1916-17	Sun	Bullwell
1915	Velle	15-45
1916	Velle	5-pass., 4-pass.
1917	Westcott	104
1914	Waverly Elec.	84-T, 84-R
1915	Willis-Knight	84-B-T, 84-B-R
1916	Willis-Knight	K Tour.
1914-17	Yale	8

### 32 x 4 1/2 (Straight Side)

1918	Apperson	Anniversary
1918	Haynes	39E
1917-18	Hudson	Speedster
1918	Marmon	34 Tour.
1918	Mercer	Sport
1918	O'Damobile	All models
1918	Studebaker	All models

### 33 x 4 1/2 (Straight Side)

1916-17	Abbott	Sedan
1918	Chalmers	68-69
1917	Detroit (Elec.)	75 & 76
1918	Detroit	75 & 76
1917-18	Franklin	Series 9 Closed cars
1918	Jordan	4-pass.
1916	Marion Handley	6-60
1918	Mitchell	D-40 Closed
1918	Mitchell	6-42 Lim.
1917	Overland	85-8N, 85-6-8N
1918	Overland	B-9
1918	Pan-American	G-5
1918	Stearns	8K8
1918	Studebaker	EG, Big 6

### 35 x 4 1/2 (Q. D.)

1914	Case	8-35
1918	Case	All models
1918	Chevrolet	870-871-872
1913-14	Marmon	32
1914	Mercer	Mt
1914	Moyle	Six
1914	Oakland	43
1913	S.G.V.	D
1914	S.G.V.	F
1916	Stearns	SKnight
1916	Westcott	51
1916-17-18	Woods	51

### 33 x 5 (Straight Side)

1916	Marmon	34 Closed
1917	Stutz	C-Bulldog Spec.

Year	Car	Model
1918	33 x 5 (Straight Side)	
1918	Cadillac	All except Type 57
1914	Oakland	6-42
1918	37 x 5 (Straight Side)	
1914	A.E.C.	6-60
1914	Chalmers	24 Lim.
1918	Columbia	"Knight"
1915-16-17	Cunningham	All models
1914	Kisselkar	6-6
1915	Kisselkar	6-80
1914	Kline	6-60
1914	Mitchell	8-7-60

### Tires Discontinued Nov. 1, 1918

Year	Car	Model
1917	30 x 3 1/2 (Straight Side)	
1917	Ams Sterling	17
1915	Milburn	15
1916-17-18	Chevrolet	480
1918	Regal	J, 4-cyl.
1916-17	32 x 3 1/2 (Clincher)	
1913	Partin-Palmer	32
1913	Maxwell	30
1915	33 x 4 (Q. D.)	
1915	Crow	E42
1914	Hupmobile	HA
1915	Studebaker	4-SD
1918	34 x 4 1/2 (Q. D.)	
1918	Austin	All models
1914	Baker (Elec.)	BRD Pneu.
1916	Davis	6E
1917	Davis	6-J
1917	Davis	6-JL
1918	Davis	JM & JI

## Bloomington Repairshops Unionized

BLOOMINGTON, ILL., July 1—A strike of mechanics and helpers of Bloomington garages and repairshops, was adjusted after the men had been out a week. This was one of a series of strikes, nearly all lines of industry being affected. Bloomington is to entertain the Illinois state federation of labor convention this fall and organizers have been working here for the past month, endeavoring to unionize every line of trade prior to this gathering. This has resulted in general misunderstanding and, for a time, the situation was serious. Nearly every line has settled the controversy. The adjustment among the garage owners and employees was unique in that the patriotism of the employees was appealed to and the importance of conservation on account of the war, was a factor in arranging a settlement.

The terms of the settlement fix 9 hours as a working day, overtime to be paid for at the rate of time and a half, including Sundays and all holidays. Apprentices are subject to the same shop rules as mechanics. They must be between the ages of 16 and 21 and serve 4 years of 290 days per year before qualifying as mechanics. All competent mechanics with 4 or more years of actual repairshop experience will receive 55 cents per hour.

Apprentices will receive 20 cents per hour and an increase of 2 cents per hour for every 6 months until 4 years have been served. Shop helpers will receive a minimum of 35 cents per hour. Floor men, washers and night men were given a ten per cent increase in pay.

The employer is given the right to reduce the hours or working force as the necessity of the business demands. When business increases, those laid off will be

given preference in re-employment in the order laid off. Should any employee be assigned to the duties of foreman, for a period less than 3 days, he will receive his regular pay. If longer than 3 days, he will receive the pay of the foreman.

Provision is made for the entertainment of grievances should any arise, a board of arbitration to be selected whose decision will be final. The agreement will be in effect 1 year. Should either side wish to terminate it or modify it a 30-day notice must be given. The amicable settlement of the controversy brought satisfaction to both sides.

### Ohio Registers 380,000 Cars

COLUMBUS, OHIO, July 1—The Ohio Automobile Department up to July 1 has issued approximately 380,000 registrations for gasoline cars in Ohio as compared with 347,542 registrations for the whole of 1917. Electrics were registered up to July 1 to the number of 4400 as compared with 4510 during last year and dealers and manufacturers to the number of 32,000 were registered to the middle of the year compared with 34,078 for last year.

### Puritan Gets American Electric

DETROIT, July 1—The Puritan Machine Co., has purchased the service parts business of the American Electric Car Co., formerly of Saginaw, Michigan. The entire stock has been moved to Detroit.

### Another Ford Plant For War

LOUISVILLE, July 1—The Louisville assembly plant of the Ford Motor Co. will be taken over by the Government for war work next month. Manager C. S. Williams of the Louisville branch, said that the factory will cease assembling cars to-day and will prepare to turn over the place to any department of the Government which calls for it.

### Combine Boston Maxwell and Chalmers

BOSTON, June 30—One of the biggest deals in combining two forces was announced to-day when the C. E. Fay Co., that handles the Maxwell line joined with the Chalmers Motors Co. of New England. The plan had been under contemplation for some time. Mr. Fay heads the company as president, Francis P. Allen, manager of the Chalmers, is vice-president, and Allan M. Fay, a son of the president, is treasurer. The C. E. Fay company has a large building on Commonwealth Avenue near the Packard plant, and the Chalmers is down on the same avenue in the heart of motor row. This latter building will be used for the sales and service of the two companies and Mr. Fay will lease the other building.

There are many rumors of proposed changes in Boston, but the men who are identified with them refuse to give out any information as to their plans until an announcement is imperative.



## Indianapolis Plans Fall Show at Fair

**To Have Three Tents Instead of Two  
—Dealers Have Been Active in  
Government Aid**

INDIANAPOLIS, July 1—The Indianapolis Automobile Trade Association will hold a fall show at the Indiana State Fair Sept. 2 to 7. Instead of using one large tent, 150 x 300 ft., as formerly, the association will use three big tops, in an effort to accommodate all those who are desirous of having space.

The association has just opened up new offices at 338 North Delaware Street, and is going to undertake a campaign of greater activity. It has heretofore been active in many affairs. It furnished cars for Liberty Bond speakers, trucks for the hauling of pianos, transported chairs for many factory meetings, gave 256 cars during the war chest week, bought \$150,000 worth of Liberty bonds, contributed three full pages of advertising for the Liberty loan campaign, all the members contributed 100 per cent to the war chest, and about 40 per cent of the members have now oversubscribed their thrift stamp quota.

A spring show will be held.

### Accessory Company Starts School for Women

BILLINGS, MONT., June 29—The Northwestern Auto Supply Co. of this city, with branches in Great Falls and Pocatello, Mont., has established a school to train women to take the place of men

in handling accessories. Several employees have shown a marked talent in this direction and the company believes that several of them will become expert mechanics. C. J. Moore, general manager of the Northwestern organization, is in charge of the school and, together with other expert mechanics, gives actual demonstrations as well as theoretical explanations. The classes are held at night, and there is no charge for tuition, nor is attendance compulsory.

### Amazon Issues Baby Book

AKRON, OHIO, July 2—In order to assist dealers in merchandising Amazon tires the Amazon Rubber Co. has issued a small booklet, 3 x 4 in., in which it sets forth the various dealer helps that it has and tells how they will help the dealer make more money. The booklet covers newspaper advertising, billboard advertising, road signs, direct by mail advertising, window displays, stationery, business cards, folders, publicity and various other services. The company offers to take the dealer's prospect list and circularize it for him.

### Mosler Changes Sales Organization

NEW YORK, June 29—A. R. Mosler & Co. have changed their Atlantic Coast sales organization. The territory was formerly covered by H. A. Wattenscheidt, but this has been divided. L. G. Flack now covers New York and western Pennsylvania, James E. H. Patton has eastern Pennsylvania and the states down to and including Virginia; I. W. Becker covers the states from North Carolina to Alabama, and John Staff has the Louisiana, Texas and Alabama territory.

## New York State Selects Tractor Test Dates

**Syracuse, Auburn, Fulton and  
Stanley Farmers to See Farm  
Machines Turn the Soil**

NEW YORK, June 29—The New York State Food Commission, which staged a tractor demonstration at Watkins, N. Y., on June 26, and which is to stage a series of such demonstrations throughout New York State, has definitely decided on the dates and places, which are as follows:

July 4—Stanley, Ontario County.

July 13—Auburn, Cayuga County.

July 27—Syracuse, Onondaga County.

Aug. 6—Fulton, Oswego County.

Each demonstration is to start between 10 a. m. and noon, and continue through the afternoon. Each machine will be allotted a plot of ground, which is to be plowed and fitted. There will be no competitive tests, the demonstrations being entirely educational in character. It is expected that nearly a dozen different makes of tractors will be in operation at each demonstration.

### Palmer to Manage Permalife

NEW YORK, June 29—C. B. Palmer has been elected general manager of the Permalife Storage Battery Co., Poughkeepsie, N. Y., and will have full charge of the business during the absence of President W. H. Lyall, who is in class 1A of the draft and expects soon to enter government service. Mr. Palmer was formerly secretary, treasurer and general manager of the Duchess Mfg. Co., Poughkeepsie, and for the past 2 years has been president of the board of directors.

### Rochester Drives Both Ways

ROCHESTER, June 29—Not only are most of the motor cars which are being sold in Rochester being driven into the city by distributors, but a large percentage of those which are being manufactured in Rochester's three motor car factories are being driven away from the factory by dealers.

About 40 cars a month are being turned out by the James Cunningham Sons Co., and of this number about 50 per cent are being driven away by dealers. These cars are being taken mostly to eastern points, as the company finds that it is far easier to secure freight accommodations to western points.

Some novel stunts are being pulled by the Sullivan Motor Car Co. in its drive-aways. One of these stunts is to double-deck a 1½-ton truck atop of a 2½-ton truck, thus delivering two cars with one driver. A record run was recently made by one of the Sullivan trucks which was purchased by the S. S. Motor Co. of 22 Elizabeth Avenue, and driven to New York City in 21 hours, exclusive of stops.

Notwithstanding the fact that the Selden Motor Vehicle Co. is largely occu-



DISTRIBUTORS OF THE STEPHENS MOTOR branch of the Moline Plow Co. met recently at the factory in Freeport, Ill., to discuss the coming year and to see the new 6-passenger Model 78, which will be in production July 15. The men in the picture are: Top row—A. J. Pray, J. R. Riley, W. J. Stuart, Factory Manager H. J. Leonard, Sales Manager O. Roy Clough, A. R. Miller, D. S. Techantz, O. W. Williams. Second row—Charles Parks, W. S. McHaffey, W. E. Hardy, Charles A. Pegau, George M. Kenouse, Advertising Manager W. L. Eastman, E. W. Traylor. Lower row—Jack Holden, L. D. Dudley, Charles McCool, E. H. Snaveley, Don Ahrens, J. F. Hunter



*SANDOW TRUCK DEALERS in Chicago recently got together to talk about the rapidly increasing truck sales possibilities. While in convention they had a war dinner and ate on war tables in a truck building*

pied with the manufacture of Liberty trucks, the company is still turning out a considerable number of commercial vehicles, the proportion being about 75 per cent Liberties to 25 per cent commercial. Very few drive-aways of commercial vehicles are being made from the Selden plant at this time, it being estimated that 85 per cent are being shipped by freight. Every one of the Liberty trucks, however, is being driven to its destination by National Army soldiers.

#### Shortage of Skilled Labor Critical

WASHINGTON, June 29—It is expected that the present ban against the private recruiting of common labor, which becomes effective Aug. 1, will be made to include skilled labor as well. At the present time government arsenals are short 4000 skilled workers and the lack of machinists, particularly, is critical. The International Association of Machinists is being mobilized and deferred classification in the draft for skilled machinists, as well as furloughs for those drafted, are steps which are being taken to alleviate the shortage. The association will allocate its skilled machinists and will assist in the transfer of those engaged in non-war work.

#### To Operate 50 Trucks

MUSKOGEE, OKLA., June 29—The Service Transportation Co., which will operate at least 50 motor trucks on a definite system of routes and will cover the state in the course of the next few months, was recently incorporated at \$200,000 by a group of prominent business men of Muskogee and eastern Oklahoma. By this means, railroad freight congestion will be overcome. At the beginning, the Service company will run its trucks out of Muskogee to Tulsa, Haskell, Claremore, Richardsville, Henryetta, McAlester, Vinita, Tahlequah and Okmulgee, Okla., and to Fort Smith and Siloam Springs, Ark., making all intermediate points. Terminal stations will be erected in all of the above cities. The prices for hauling will be about the same as the average local freight rates.

## Enclosed Car Sales Show Great Increase

### Overland Finds Business Best Since It Began—Sales Exceed Entire History Excepting Coupe

TOLEDO, June 27—The demand for closed cars is greater than at any previous time, according to the Willys-Overland, Inc., and the proportion of closed car sales as compared with sales of open models shows a remarkable increase. More Overland closed cars have been sold since Jan. 1 this year than the total sales of all closed cars, excepting only the coupe types, in all the previous years the company has been in business. At the present time three models of closed cars are available for delivery: Overland model 90 sedan and model 85-six coupe; Willys-Knight model 88-four coupe. Production plans for the balance of this year also provide for other models, which will be available for delivery during the summer months. These include the Willys-Knight model 88-four sedan and limousine and the model 88-eight sedan, limousine and coupe. Some of these cars will be available for delivery early in July and most of them in August.

#### New York Dealers Decrease

ALBANY, N. Y., June 27—The records of the automobile bureau of the Secretary of State's office show a considerable decrease in the number of dealers in the state, although by the end of the year the figures of last year may be equalled. There have been 2172 dealers registered this year, or 370 less than a year ago at this time. There has been a substantial increase in all lines of motor cars this year. Up to June 12 there had been 326,776 passenger cars registered, a gain of 46,872 over the same period last year. Omnibuses show a gain of 6914, while the number of trucks has gone to 65,724, an increase of 21,230 over the same period last year. There has been an increase of 14,594 in the number of licensed chauffeurs, 119,195 having been licensed up to June 12. Secretary Hugo estimates that 150,000 will be listed by

the end of the year; that the number of motor cars will reach the half million mark, and the total receipts of his bureau will be \$5,000,000.

Secretary Hugo has decided that next year's plates will be of a black and white combination, white numerals on a black background.

#### Remy Advances Conklin and McMahan

DETROIT, June 29—O. F. Conklin, who has been chief engineer of the Remy Electric Co., Anderson, Ind., since it first began producing automobile equipment, has been made general manager of all Remy interests, succeeding H. W. Griffith. G. V. McMahan, who has been with the Remy company for 9 years, recently as sales manager of the Motor Equipment Division, has been appointed assistant general manager. He succeeds John G. Wood, who with Mr. Griffith has entered the Mid-West Engine Co., Indianapolis, which has been formed by S. A. Fletcher.

#### San Diego Forms an Association

SAN DIEGO, July 2—Sixteen dealers in this city have formed the San Diego Motor Car Dealers' Association and are putting into effect the war conservation measures of the National Automobile Dealers Association. The dealers will at once begin closing up their places holidays, evening and Sundays. Attention will be paid to municipal legislation, with which the dealers have already been quite successful. The leaders in the formation of the association were R. T. Dawson, Kissel; John McKnight, Studebaker, and L. C. Maire, with the J. W. Leavitt Co.

#### Hartford to Curtail Free Service

HARTFORD, June 29—The Hartford Automobile Dealers' Association, Inc., plans rigid enforcement of regulations for the conservation of labor and time. The idea is to do away with night work and curtail free service. L. H. Elmer, president of the association, said the dealers had been cheating themselves for a long time on free service and it was high time they woke up to the fact.

Owners will be encouraged to learn all about their cars and make their own minor repairs. Russell P. Taber, head of the Reo organization, has had in mind for some time the advisability of starting an owners' school.

#### State Gasoline Figures

Editor Motor World: The June 19 issue arrived Saturday afternoon, and we took the liberty of having a photograph of your Editorial Observation page made, and inserted in our two Sunday papers.

In the minds of many dealers there were just enough statistics together with crisp information to allay the fears of prospects.

I am sending the two pages from the papers showing the advertisement as used.—Syracuse Automobile Dealers' Association, H. T. Gardner, Secretary.



*The ladies went in for foot races and other athletics at the Denver Automobile Trades Association picnic*

## 500 Dealers Picnic in Foothills of Rockies

**Denver Trade Association Enjoys Its Annual Outdoor Frolic and Adds \$300 to Red Cross**

DENVER, June 24—An all-day good time for about 500 motor tradesmen, their employees, families and friends, with the added enjoyment of raising a \$300 fund for the Red Cross, made the third annual picnic of the Denver Automobile Trades Association a lively event to mark the close of last week. The event was held in Lookout Mountain Park, in the foothills of the Rockies, 21 miles west of Denver, and half a mile higher.

There were foot races, baseball games, a tug-of-war, novelty races, a wrestling match and other athletic contests, dancing and all sorts of fun to make up a successful outing. Some of the tradesmen were fined for wearing white collars—and others for not—and fines,

special fees and enthusiastic subscriptions netted about \$300 for Red Cross work.

The affair was in charge of a committee of nine, representing all branches of the motor trade. Besides Secretary Harry G. Moock, of the trades body, the committee consisted of: Chairman, Calvin C. Eib, Willys-Overland, Inc.; Charles T. Bruckman, Detroit Electric Garage; H. Grant Wimbush, United Motor Sales Co.; Ralph E. Hay, Peters-Tucker-Hay Rubber Co.; A. M. Platt, Platt-Fawcett Motor Co.; Edgar W. Johnson, Norton-Buick Auto Co.; Fred Smith, Denver Auto Goods Co.; Elmer Johnson, Miller-Ray Motor Co. The committee secured the donation of prizes for the contests, arranged the entire program and handled the day's campaign for Red Cross subscriptions.

The picnickers all brought their own lunches, but coffee was furnished everybody by the association. To show respect for the wishes of the National Food Administration, however, the coffee was served without sugar or cream.

A funeral ceremony was held over "Old Man Free Service" to celebrate the recent action of the car dealers in cut-

ting down free service from the customary year to the required 90 days covered by the regular guarantee.

The outing event was made the more enjoyable by reports on all sides of extra good business during the nearly-closed first half of 1918.

### Louisville Tire Dealers in Line

LOUISVILLE, July 1—Louisville tire dealers have adopted the recommendations of the War Economy Board regarding service during the continuance of the war. They followed the action of the automobile dealers in adopting similar resolutions. All of the tire dealers will close their stores at 6 p. m. every evening and on Sunday, beginning July 7.

Motorists are urged to buy valve plungers, shoes and patches during the week and to carry spare tires and tubes, while the service stations are closed. Owners also are requested to inflate their tires on Saturday if Sunday drives are contemplated and are necessary.

No service wagons will operate after 6 p. m. nor all day Sunday. Salesrooms, shops and office will be closed. No employees will be on duty.



*Ready for the three-legged race at the third annual picnic of the Denver Automobile Trade Association*

## Prominent Tradesmen Assume New Duties

### Resignations and Promotions Place Workers in New Places

Hi Sibley, former advertising manager of the Republic Motor Truck Co. Inc., Alma, Mich., has joined the advertising staff of the Packard Motor Car Co., Detroit.

R. J. Price, sales manager for the Highway Tractor Co., Indianapolis, has resigned to become zone manager in the Southeast for the Heath-Duplex department of the McCord Mfg. Co., Detroit.

Lawrence Hayes has been appointed factory superintendent and assistant plant manager of the Hess-Pontiac Spring & Axle Co., Pontiac, Mich., having been transferred from the Perfection Spring division of the Standard Parts Co., Cleveland, where he was superintendent.

Elmer H. Hohenthal, formerly assistant sales manager of the Bosch Magneto Co., and more recently sales and advertising manager of the Simms Magneto Co., has been appointed manager of the sales and service branch of the Elsemann Magneto Co. in Detroit.

J. F. Richman, who resigned some time ago as factory manager of the Cole Motor Car Co., Indianapolis, is now associated with the Allen Motor Co., Fostoria, Ohio, in a similar capacity.

R. J. Myers of J. H. Haney & Co., Hastings, Nebraska, has joined the colors and is at present located at Ft. Reilly.

James K. Beach has been appointed district sales manager for the Ajax Rubber Co. with headquarters in Dallas. He succeeds H. C. Burnett, who enlisted in the army. Beach was formerly supervisor for the Ajax Co. in California with headquarters at San Francisco.

J. E. Eldridge, president of the Eldridge Battery Co., operating stations at Washington, Clinton, Fairfield, Ottumwa and Muscatine, Iowa, has enlisted in the radio service and will leave for Camp Little Silver, N. J., next week.

L. N. Bartlett has been appointed assistant manager of the Republic Rubber Co. office, St. Louis. George M. Hoffman will continue as manager.

Fred C. Melnhardt, Milwaukee, for nearly 20 years auditor of the United States Engineer's office at Milwaukee, has resigned to become associated with the Milwaukee Auto Engine & Supply Co., Milwaukee, as business manager. He assumed his new duties June 15.

D. Kiefer, engineer in charge of the ordnance division at the Harroun Motors Corp., Wayne, Mich., has resigned to join the navy.

J. M. Dine, for the past 5 years manager of the Omaha branch of the Goodyear Tire & Rubber Co., has been appointed assistant manager of the Chicago branch of the company. C. A. Cramer of Cedar Rapids, Iowa, succeeds Dine as manager of the Omaha branch. Both men assumed their new duties July 1.

Walter M. St. Cyr, partner in the St. Cyr Bros. accessory firm at 2844 North Grand Avenue, and two other accessory stores, has enlisted in the Quartermaster's Department, U. S. A., and has been stationed at Jacksonville, Fla.

I. N. Bartlett of the Republic Rubber Co. branch at Kansas City, Mo., has been promoted to assistant to Manager George M. Hoffman of the Republic branch at St. Louis.

George H. Bishop, for sixteen years connected with the Eclipse works of Fairbanks, Morse & Co., Beloit, Wis., to-day resigned to accept charge of the general organization and system works of the Wright-Martin Aircraft Corp., with works at New Brunswick, N. J., Long Island City, N. Y., and other eastern cities.

Theodore H. Harvey, general manager and assistant secretary of the Pelton Steel Co., Milwaukee, since its organization 3 years ago, has resigned to become general manager of the Ohio Steel Foundry Co., Springfield, O., effective July 1.

T. O. Kellogg, general manager of the Overland Wausau Co., Wausau, Wis., distributor of the Overland and Willys-Knight, has been transferred to the same position in the Overland Madison Co., Madison, Wis., distributor in the State capital territory embracing all of southwestern Wisconsin.

### Record Pennsylvania Registration

PHILADELPHIA, June 29—It is expected that fully 350,000 Pennsylvania license tags will be used this year, as the department at Harrisburg is issuing No. 325,000. The order for 1919 will be the biggest ever issued—for 400,000, to be of black enamel with numbers in red and a space for the manufacturer's number. They will be similar in general style to those now in use.

Highway Commissioner J. Denny O'Neil has issued notice that automobile and motorcycle license plates discolored with oil, grease, or dirt so that the numbers are not plainly discernible, as well as plates bent or curved so that the figures cannot be seen, will not be tolerated. Police authorities have reported that they have been unable in numerous instances to take the number of motor cars that have been speeding.

### Two New Redden Units

CHICAGO, July 1—The Redden Motor Truck Co. has enlarged its line by the addition of two new products, one a universal truck maker, which has been designed to fit any make or model of passenger car, regardless of the kind or location of the transmission mechanism and a four-wheeled trailer.

## Columbus Dealers Try War Service Program

### Will Do Away With Night and Sunday Service and Educate Owners of Cars

COLUMBUS, OHIO, July 1—The war recommendations of the War Service Board were unanimously adopted at a recent meeting of the Columbus Automobile Trade Association. These recommendations include doing away with all unnecessary service, Sunday work, night work, education of mechanics, education of car owners, putting business on a cash basis and the elimination of all waste.

The elimination of Sunday and night work only applies to sales agencies; garages have not entered into the plan. Sales agencies which have been in the habit of giving Sunday and night service have arranged with certain garage companies to care for their makes of cars at times when their service stations are closed.

In addition, the Columbus Automobile Trade Association has opened a school for the education of young mechanics. It will be held at the garages and service stations of the various members and already a long list of students has been enrolled. The committee in charge of the school consists of Y. B. Jones, chairman, Frank Lawwell, R. C. Crippen, F. H. Nadig and Frank J. Girard.

### Turnbull Sales Handled at Defiance

DEFIANCE, OHIO, June 27—The truck sales division of the Turnbull Motor Truck Co. has been transferred from Fostoria, Ohio, to the factories at Defiance. When the old Turnbull Wagon Co. was reorganized last fall for the manufacture of the Defiance 1½-ton motor truck, the sales division was established at Fostoria, the home of the Allen Motor Co.

## Motor Car Securities Quotations

	Bid	Asked		Bid	Asked
*Ajax Rubber Co.	87½	87½	*Maxwell Motor Co., Inc., com.	27½	28½
*J. I. Case T. M. Co., pfd.	80	86	*Maxwell Motor Co., Inc., 1st pfd.	55	..
Chalmers Motor Co., com.	4	6	*Maxwell Motor Co., Inc., 2d pfd.	19	21
Chalmers Motor Co., pfd.	25	35	Miller Rubber Co., com.	99	101
*Chandler Motor Co.	81	82	Miller Rubber Co., pfd.	96	92
Chevrolet Motor Co.	138	142	Packard Motor Car Co., com.	112	120
*Fisher Body Corp., com.	38½	40	Packard Motor Car Co., pfd.	93	..
*Fisher Body Corp., pfd.	86	89	Paige-Detroit Motor Car Co.	18	20
Fisk Rubber Co., com.	55	58	Peerless Truck & Motor Corp.	14	16
Fisk Rubber Co., 1st pfd.	98	102	Portage Rubber Co., com.	100	102
Fisk Rubber Co., 2nd pfd.	78	103	Regal Motor Car Co., pfd.	..	..
Firestone Tire & Rub. Co., com.	89	91	*Reo Motor Car Co.	13	15
Firestone Tire & Rub. Co., pfd.	93	95	*Saxon Motor Car Corp.	8½	8½
*General Motors Co., com.	152½	155	Springfield Body Corp., com.	..	..
*General Motors Co., pfd.	81½	82	Springfield Body Corp., pfd.	..	..
*B. F. Goodrich Co., com.	45	46	Standard Motor Construction Co.	12	14
*B. F. Goodrich Co., pfd.	98	99	*Stewart-Warner Speed, Corp.	57½	58½
Goodyear Tire & Rub. Co., com.	167	170	*Studebaker Corp., com.	46	46½
Goodyear Tire & Rub. Co., pfd.	97	99	*Studebaker Corp., pfd.	80	90
Grant Motor Car Corp.	2½	3½	Swinehart Tire & Rubber Co.	50	65
Hupp Motor Car Corp., com.	2½	3	United Motors Corp.	34	35
Hupp Motor Car Corp., pfd.	78	81	*U. S. Rubber Co., com.	58½	59
International Motor Co., com.	29	35	*U. S. Rubber Co., pfd.	103	106
International Motor Co., 1st pfd.	55	65	*White Motor Co.	41	42
International Motor Co., 2d pfd.	35	40	*Willys-Overland Co., com.	20	20½
*Kelly-Springf'd Tire Co., com.	50	51	*Willys-Overland Co., pfd.	81	83
*Kelly-Springf'd Tire Co., 1st pfd.	81	87	Standard Parts Co.	63	68
*Lee Rubber & Tire Corp.	19	20	*At close June 29. Listed N. Y. Stock Exchange. †Par value \$10.		



## Farmers in Corn Belt Taking to Tractors

### U. S. Department of Agriculture Issues Report Showing Increasing Popularity

WASHINGTON, July 1—Evidence of the growing popularity of tractors on corn-belt farms is shown by reports made by more than 600 tractor owners, nine out of every ten reporting that their investment in a tractor had proved profitable.

These data were obtained in the summer and fall of 1917 and in the spring of 1918 on representative Illinois farms by specialists of the United States Department of Agriculture in order to determine just what conditions justified the purchase of a tractor in that section.

Experienced tractor owners who made reports stated that tractors will prove profitable on most corn-belt farms of 180 acres or more, while in their opinion they should not be expected to do so on farms of much less than 130 acres.

The report of the investigators, published as Farmers' Bulletin 965, states that while the figures were obtained in only one State, they are applicable throughout the corn belt and that the prospective tractor purchaser may reasonably count upon equaling the average performances reported in the study.

Nearly three-fourths (71 per cent) of those who reported owned tractors capable of pulling three plows. Eleven per cent recommended two-plow machines, while 13 per cent advocated the use of four plows. In answer to the question "What do you find to be the principal advantages of a tractor for farm work?" the answers indicated that its ability to do heavy work and do it quickly, thus covering the desired acreage within the proper season, was considered the principal advantage.

The saving of man power and the doing away with hired help, enabling a man to farm a larger acreage and thus increase the crops he can raise, were next in importance. The ability to plow to a good depth, especially in hot weather, was also emphasized.

Under disadvantages the difficulty of efficient operation was the principal point, and this fact should be kept in mind by everyone who considers the purchase of a tractor, says the bulletin.

In this connection it suggests that tractor owners take a course of training under competent instructors in this line, as the results of such a course usually amply justify the time and expense involved.

Approximately one-third of all the Illinois farmers reporting increased the acreage they were farming after purchasing a machine. It is obviously impossible to determine definitely the probable life of the latest model tractors, since none of them is worn out, but the average time as stated in the report was from 7½ to 8 years.

The life of a tractor will depend upon the amount of work done each year—that is, the number of days or hours it is used. Reports show that tractors were used on the average of 45 days per year. The area covered per day (10 net working hours) in plowing with the tractors was 6½, 8½ and 10 acres for the two, three and four plow outfits, respectively. The average depth of plowing was slightly less than 7 inches, while the average depth on the same farms with horses was about 5½ inches. About 50 per cent of the tractor owners reported that the quality of work done by tractors is better than that done by horses, while less than 3 per cent said it is poorer.

Thirty-six per cent of the owners reported that no time was lost in the field on account of trouble with their outfits, while those who reported trouble stated that the average time lost was a little over three-quarters of an hour per day. On about three-fourths of the farms the tractor displaced about three horses, which represented one-half of the cost of the tractor outfit.

### N. A. D. A. After Missouri, Arkansas and Illinois

ST. LOUIS, July 1—Jos. M. Schlecht, president of the St. Louis Association, who was named at the Chicago meeting to organize Missouri, Arkansas and Illinois for the N. A. D. A. has named a committee to select county chairmen in all of the counties in the St. Louis trade territory. Members of the committee are:

Phil H. Brookman of the De Luxe Automobile Co.

Roy Stewart, wholesale salesmanager, Vesper-Buick Auto Co.

George Weber of the Weber Implement and Automobile Co.

F. H. Fahrenkrog of the Burdell Motor Co.

T. L. Hausman of the Overland Automobile Co.

The county chairman selected will be asked to become organizers for the N. A. D. A. This committee will select the chairmen only for that part of the three states in the St. Louis trade territory.

### St. Louis Appoints Same Monitors

ST. LOUIS, July 1—President Schlecht of the St. Louis Association, has named the following committee to make a survey of the local field as to observance of Sunday closing and to report on methods of enforcing the War Service Rules:

P. H. Brockman of the De Luxe Automobile Co.

H. L. Schnure of the Velie Automobile Co.

I. C. McNiece of the Cadillac Automobile Co.

Steps are to be taken as soon as possible to enforce observance of the rules on service stations not connected with the association.

## St. Louis Tire Dealers Adopt War Service

### Shut Down on Night and Sunday. Sales of Tires, Accessories and Repairwork

ST. LOUIS, July 1—The War Service Committee of the St. Louis Automobile Manufacturers' and Dealers' Association on last Wednesday obtained the last signature of a tire dealer to a pledge to observe the War Service Rules.

President Schlecht says that the pledges of the tire service men were easily obtained, because so many motor car owners thought that when the salesrooms service stations went on a war basis, the tire firms were included. As a consequence, scores of their Sunday and night customers came in during the day. On Saturday afternoons since the War Service program became effective, the tire service stations have had the biggest Saturday afternoons in their history. This demonstrated to them that the Sunday and night closing was not impossible. So when the invitation to "come on in" was given to them conditional on all service stations joining, they all signed readily.

### St. Louis Flirts With Return Loads

ST. LOUIS, July 1—The first effort at taking up the return load movement in this city was made last week by the Traffic Bureau of the Chamber of Commerce. Members of express firms, and a committee of the St. Louis Automobile Manufacturers' and Dealers' Association were invited to participate.

Traffic Manager Coyle of the Chamber, after hearing a statement of the traffic conditions to nearby cities, asked the managers of the express and delivery lines to submit to him their schedules.

Meetings in the interest of better truck service will be held twice monthly. C. E. Lightfoot of the General Motors Truck Branch and Harry Newman of Harry Newman, Inc., represented the truck dealers and were the promoters of the conference.

### St. Louis Closed by Order

ST. LOUIS, July 1—Sunday and night closing of motor car service shops and oil stations was enforced yesterday by an order given out Saturday by Sigmund Baer, representing the National Council of Defense. Notice was given of the appointment of Robert E. Lee, secretary of the local dealer and accessory associations, as special commissioner for St. Louis and St. Louis County, with power to use necessary measures to enforce closing. The evening hour is set at 7 o'clock. Only garages and service stations selected by the dealers' association will be permitted to operate during closed hours. Garages are forbidden to give, lend or sell any supplies of any kind during closed hours.

## Manufacturers Seek to Protect Dealers

### Diminishing Production Brings Distribution Problems—Dealers Add to Lines

DETROIT, June 29—In spite of diminishing production, distribution agencies of most of the passenger car manufacturers are still intact. It is true, distributors are not receiving as many cars as they desire nor as many as they need to supply the increasing demand, but they are holding unto their respective lines and making the best of the situation, accepting what supply they can get from the manufacturers.

There are many who, rather than step out and relinquish their agencies, have added another line of cars at a different price so as not to conflict with present lines or who have taken on the agency for a tractor or truck line. The acquisition of a line of accessories has proved successful for many.

Manufacturers are protecting their distributors as much as they can, endeavoring to equalize distribution. But where production is so low that an attempt to make an equal distribution would result in a too thin apportionment it is obvious that another course must be taken; a number of distributors must be eliminated. With such action necessary the question of what agencies to drop is an easy one to answer. Some of the manufacturers state we are in a cleaning up period—a weeding out of the poorer material. It is only natural that the "live-wire" agents or distributors should be helped and encouraged.

The Packard Motor Car Co. is letting distributors work out their own salvation, but these dealers are in a different position from the majority; trucks help out the situation.

About 10 per cent of the distributors of the Saxon Motor Car Corp. have taken on other lines, but none of them has given up the agency. The company is taking care of the more desirable districts.

A small number of the distributors for the Oakland have taken on tractors and trucks. The Oakland company has been able to send a satisfactory number of cars into each territory and the distributors are hanging on.

The Willys-Overland, Inc. has been able to maintain a general distribution. A number of the company's distributors have added a truck line. The same condition prevails in the case with Reo and a number of others.

#### Dealer Has Photo Contest

PHILADELPHIA, June 27—An unusual photographic contest with Thrift Stamps as prizes is announced by the Stability Motors Co., eastern distributor for Atterbury and Old Reliable motor trucks, Rennoc tractors and Fruehauf

trailers. E. J. Berlet, president of the company, believes that horses are overcome by heat mainly because of overloaded wagons and partly because of inhumane treatment by drivers and publications of such photographs, he thinks, will do much toward improving conditions for horses. Any amateur photographer in southeastern Pennsylvania, south Jersey or Delaware is eligible. Mayor Thomas B. Smith has been asked to act as a judge, and those invited to serve with him include Ernest Trigg, president of the Chamber of Commerce; Charles Stinson, president of the Rotary Club; Thomas Shallcross, Jr., president of the Kiwanis Club, and William H. Rau, commercial photographer. Twenty-one prizes will be awarded as follows: First prize, five Thrift Stamp books, each containing \$3 worth of stamps; second prize, four Thrift Stamp books, each containing \$2.50 worth of stamps; third prize, two books, \$2.50 each; fourth prize, two books, \$1.50 each, and 17 prizes, Thrift Stamp books with \$1 each. The contest closes Aug. 31.

#### Philadelphia Garagemen Play

PHILADELPHIA, June 27—"A rousing success," that is the way the members of the Philadelphia Garage Association characterize the first annual sociability automobile run to Atlantic City and return. In proof of the hit it made, it has been voted to hold yearly excursions of this kind to the shore.

Between fifty and sixty cars were checked in when the start was made from the Mercury Garage, and more than 200 members and friends enjoyed the trip in the bright sun and cool breeze.

Charles Stansfield won the first prize of the outing. There was no specified period allotted for the entries, but each driver estimated a time set by the committee, of which George G. Blind, president of the association, was chairman. It was 4 hr. 25 min., and Stansfield came within 2 min. in his guess for the prize, the actual running time being 4 hr., 27 min. The trophy was a nickel-plated lunch set for six persons.

Miss Viola Gilks w.n the "booby" prize. Others winning awards in the order named were: H. J. Stockum, George W. Ellis, W. P. Miller, Charles Ebinger, Charles Detweiler, J. W. Nock, William M. Harkrader, F. J. McCormick, E. N. Waters, J. A. Dionni, L. C. Humphries, Charles E. Meiswinkel, Warren W. Gilbert, J. B. McGill, Louis Bosh, Horace Moore and the staff of the Eastern Motors Corporation.

#### Female Help For Quincy.

QUINCY, ILL., June 29—Girls will be employed in the mechanical departments of the various shops here, if the withdrawal of more mechanics for war purposes is continued. The Irwin Motors Co., Marmon dealer, is advertising for female help for its repairshop and to date has 15 applicants from which a number will be selected.

## Makers of Headlamps Confer Over "Glare"

### Secretary Hugo of New York Investigates Methods of Testing Lamp Lenses

ALBANY, N. Y., June 25—Representatives of manufacturers of motor vehicle headlights in all sections of the United States to-day conferred with Secretary of State Francis M. Hugo on the specifications for the forthcoming tests, which will govern the use of lights on motor vehicles. The conference was for the purpose of establishing uniform standards for lights which eliminate glare, under authority of a law enacted by the last legislature giving the secretary discretionary power. The tests are to be carried out in laboratories, each sample submitted being subjected to a rigid investigation to determine whether they conform to the following conditions:

Any pair of lamps, under the conditions of use, must cast a beam which, when measured on a level surface at a distance of 220 ft. directly in front of the car and at the same point between the level surface and a point 42 in. above this surface, is not less than 1200 apparent candlepower.

Any pair of headlamps, under the conditions of use, shall cast a beam which, when measured at a distance of 100 ft. directly in front of the car, and at a height of 60 in. above the level surface, does not exceed 2400 apparent candlepower, nor shall this value be exceeded at a greater height than 60 in.

Any pair of headlamps under the conditions of use shall cast a beam which, when measured at a distance of 100 ft. ahead of the car, and 7 ft. or more to the left of the axis of the same, and at a height 60 in. or more above the level surface, does not exceed 800 apparent candlepower.

#### Discouraging Charge Accounts.

HARTFORD, June 29—Repairs and parts are becoming more and more a cash proposition here. Less credit is being extended and charge accounts are not encouraged. Some stations which have allowed the better trade to run gasoline accounts have curtailed and now all must pay cash. This move is explained by the fact that the gasoline business having passed to two refinery agencies the dealers must pay cash when their supplies are renewed.

#### Cell-Beam Resumes Marketing.

NEW YORK, June 29—The Cell-Beam Mfg. Co., 1101 Bedford Avenue, Brooklyn, manufacturer of the Cell-Beam searchlight, has resumed the marketing of its product direct from the factory, through the jobbing trade. This policy will permit closer co-operation between the jobber and the manufacturer.

# The RETAIL NEWS

## SOUTHWEST

Ledgerwood & Hillier, Burden, Kan., have sold their garage to Cecil Savage.

The Handy Motor Co., Douglas, Kan., has been sold to Morris & Wilt.

A. A. Hite & Son, Edna, Kan., have bought the garage of Goodwin Bros.

A. E. Mayhew & Son, Effingham, Kan., will open a Hudson Super-Six salesroom in Atchison, Kan.

W. R. Archer, Great Bend, Kan., has bought the Willard Service Station from C. E. Gilmore.

The Willard Service Station, Junction City, Kan., is erecting a new building on North Washington Street, which it will occupy the latter part of July.

R. U. La Fever, Kingman, Kan., has leased the Overland Garage.

Henry Minton, Marion, Kan., has bought Al. Fishburn's interest in the Tibs Garage.

J. N. Force, Moline, Kan., has sold his interest in the garage to Don Morton.

L. S. Woolington, Newton, Kan., has purchased his partner's interest in the Woolington-Rich Motor Co., and will reorganize the business.

C. R. Smith, Ottawa, Kan., has sold his garage to E. A. Chulufas, and will go into military service as driver.

The Briggs Motor Co., Parsons, Kan., will move into new quarters in the Green Bldg.

Ray Cole, Smith Center, Kan., has bought the interest of his partner in the Cole & Byerley Garage.

George Nugum, White Cloud, Kan., has bought the interest of Mae Robinson in the White Cloud Garage.

J. N. Force, Moline, Kan., has sold his garage equipment to Don Morten of Elk Falls, Kan.

Joe Daney, Kingman, Kan., Oldsmobile dealer, has opened new salesrooms.

Will Sackhoff, Jr., Beloit, Kan., has bought out the interest of J. Pottberg, Jr. in the North Garage.

Williams & Co., Waverly, Kan., are remodeling their garage.

Mac Robinson, White Cloud, Kan., has sold his garage to George Nuzum.

J. E. Bunstead, Wichita, Kan., has bought the West Side Garage from Harry Myers.

J. W. Pope, California, Mo., has bought Fred Andres' interest in the California Garage.

The Overland Garage, Marshall, Mo., has bought the business of William Blosser.

C. S. Casey, Maryville, Mo., has leased a building and will move into the new quarters immediately.

M. R. Walsh, Springfield, Mo., has bought the Springfield Storage Battery Co.

The Robinson Cadillac Motor Co., St. Joseph, Mo., has increased its capital stock from \$10,000 to \$25,000.

The Briscoe Motor Sales Co. will move. On July 1, to new quarters at 3925 Locust Avenue, St. Louis.

The Wilson Motor Car Co., St. Louis, has moved to new quarters at 291 Locust Avenue.

Fred Chisler, Ulrich, Mo., has bought the garage of Grover Delap.

Selby Simpson and Wm. Goetz, Canton, Mo., have bought the Patterson Motor Co. Garage.

John McClure, El Dorado, Kan., has moved his garage from 208 South Main to the Dillenbeck Bldg.

Chub Parsons, Hurley, Mo., has bought the Hurley Motor Co.

M. R. Walsh, Springfield, Mo., has bought the Springfield Storage Battery Co.

The American Tire Jobbers, Joplin, Mo., have opened one of a chain of tire shops here. A. B. Unger of Muskogee, Okla., is president of the company.

Schapflin, Buchan & Buchan, Kansas City, have bought the Northwestern Garage.

C. S. Casey, Maryville, Mo., has moved his tire repairshop to the building formerly occupied by the Tilson Garage.

L. L. Des Combes & Co., Warrensburg, Mo., has bought the garage of Charles Lobban and will convert it into a repairshop.

Wesley Urban, Grandfield, Okla., has purchased the interest of L. E. Edward and is now sole owner of the Grandfield Garage.

Frank B. Scott, Hominy, Okla., has bought the Hominy Garage from J. H. Stamps.

Henry S. Howell, Mill Creek, Okla., has bought the City Garage from John Harris.

Virgil Robertson, Strong City, Okla., has sold his interest in the S & C Garage to Ell Baker.

J. Hines Jones, Marlow, Okla., has sold his interest in the Marlow Auto Co. to Col. John E. Williams.

T. H. Gibson, Roff, Okla., has moved his garage to the Vaden Bldg.

Scott & Keennecke, Houston, Tex., have bought the Serv-U Shop from Wilson & Graham.

E. F. Palmer and W. H. Stewart, Livingston, Tex., have bought F. M. Haddon's interest in the Auto Service Co.

E. L. Haner & Co., Seguin, Tex., have moved to the Blumberg Bldg.

## New Truck Dealers

Stephens & Schade (Moreland) Clifton, Ariz.

Jerome Transfer Co. (Moreland), Jerome, Ariz.

Karns Brothers (Moreland)...Nogales, Ariz.

Culbertson Motor Co. (Moreland), Phoenix, Ariz.

Moreland Truck Sales Co. (Moreland), Tucson, Ariz.

Bernstein Brothers (Wichita), Little Rock, Ark.

Bernstein Brothers (Wichita), Pine Bluff, Ark.

Murphy Machine & Equipment Co. (Duplex), St. Louis

Carter & Burnside (Moreland), Silver City, N. M.

Clay C. Smith Motor Co. (Wichita), Okmulgee, Okla.

Southland Motor & Truck Co. (Wichita), Paris, Tex.

Charles Gehrke (Kissel)...Glasco, Kan.

Hutchinson Electric & Repair Co. (Ward), Hutchinson, Kan.

Davis Motor Car Co. (Corliss)...St. Louis

Meletio Auto Service Co. (United States).

Wilson Motor Car Co. (Acason)...St. Louis

J. Frank Todd (Auto Horse) Webb City, Mo.

C. M. Barber (Columbia) Albuquerque, N. M.

D. A. Bradshaw (Kissel).....Prairie, Tex.  
Ranger Auto & Supply Co. (Kissel),  
Ranger, Tex.

## New Garages.

The Hill-Howard Motor Co.,

Arkansas City, Kan.

L. C. Ray.....Coffeyville, Kan.

Joe Campbell.....Concordia, Kan.

The Arnold Auto Co.....El Dorado, Kan.

Shoemaker & Dunhams.....Ft. Scott, Kan.

E. P. Anderson.....Garfield, Kan.

Clarence Holton.....Independence, Kan.

A. H. Schutte.....La Crosse, Kan.

Snider & Waggener.....Macksville, Kan.

The Palace Garage Co.....Neodesha, Kan.

Carl Buckwalter.....Newton, Kan.

T. J. McNerney.....Tonganoxie, Kan.

B. G. Goodson.....Hannibal, Mo.

Bricker Garage Co.....Pleasant Hill, Mo.

W. C. Francis & Foster.....Blanchard, Okla.

Stewart & Greer.....Davis, Okla.

Arthur Lamb.....Pawhuska, Okla.

Farris Garage Co.....Purcell, Okla.

J. O. Cales.....Ralston, Okla.

C. F. Siron.....Sulphur, Okla.

W. S. Robertson (addition),

Mineral Wells, Tex.

H. R. Lloyd.....White Deer, Tex.

Plunkett & Ray.....Coffeyville, Kan.

Stout Motor Co. (addition).....Marion, Kan.

D. J. Hyatt Garage & Storage Co.,

Wichita, Kan.

Sam Barr.....Butler, Mo.

William Bredeholt.....Emma, Mo.

C. J. Marrs & Sons.....Fairview, Mo.

H. N. Duck...4707 Troost Ave., Kansas City

Bricker Garage.....Pleasant Hill, Mo.

City Garage (addition).....Bokehito, Okla.

M. E. Garber.....Enid, Okla.

## PACIFIC COAST

J. H. Lewis has bought the Pennington Vulcanizing Works, 2422 Santa Clara Street, Alameda, Cal.

John G. Bass, president of the L. A. Tire & Vulcanizing Co., Los Angeles, has opened a new store at Seventh and Los Angeles Streets.

The W. J. Benson Co. has opened a branch Stephens salesroom at 2835 Broadway, Oakland, Cal.

J. O. Pulse has opened salesrooms for Dort, Liberty and King cars at 257 Fifteenth Street, Richmond, Cal.

L. Lawrence & Co. have opened a branch service station at 115 Hyde Street, San Francisco, under the style of The Lawrence Co. of San Francisco.

Elmer A. Palmer has purchased the Marshall Square Vulcanizing Works, San Francisco, and R. P. Jones will act as manager.

H. T. Schroeder, formerly manager of the Sacramento Garage, has opened the Motor Inn Garage at 1267 Bush Street, San Francisco, with C. E. Roy as manager.

H. C. Woodbury and H. Johnson have purchased the Auto Service Station at 50 Mission Street, San Francisco.

Warner & Clough have opened tire salesrooms and a vulcanizing plant at 1101 Post Street, San Francisco.

The Schwartz Automobile Co. has moved to 3928 Geary Street, San Francisco.

Buckley & Kalloch have opened an accessory store at 3928 Geary Street, San Francisco.

T. P. O'Brien has opened the Reliable Vulcanizing Works at 3846 Geary Street, San Francisco.

The Little Automobile Co., San Francisco, has made alterations in the establishment and leased two adjoining buildings.

Weihmann & Jennings have opened a supply store at Geary and Eighth avenues, San Francisco.

Leo E. Clausen and F. E. Haggerty have established the Fillmore Vulcanizing Works at 1037 Golden Gate Avenue, San Francisco.

Swain & Elkington have opened a Paige repairshop at 1936 Van Ness Avenue, San Francisco.

Dake & Hart have purchased Cedar's Garage, Santa Cruz, Cal.

A. C. Handley has opened a Prest-O-Lite battery service station at Santa Cruz, Cal., under the style Pacific Battery Co.

The Frank O. Rentstrom Co. has opened salesrooms in Stockton, Cal., for Premier and Grant cars.

The Goodrich Tire & Rubber Co., Portland, is planning the construction of a 1-story addition to its building.

W. H. Wallingford, Portland, has taken the agency for the Parrett tractor for the state of Oregon.

Andy Anderson, owner of the Standard Garage, Bellingham, Wash., and Overland distributor, has joined the National Army.

The Hainsworth Motor Co., Oldsmobile distributor in Seattle, has opened a new Oldsmobile Service Station on Twelfth Avenue.

Kline & Winningham, Seattle, Maxwell and Chandler dealers, have opened new quarters at Railroad Avenue and First Avenue South.

The Overland-Pacific, Inc., Seattle, has moved into its new 2-story building at Twelfth Avenue and East Pine Street.

E. R. Rickman, Seattle, has opened quarters at 613 Third Avenue for the Armstrong European retread.

The R. M. Wade Co., Spokane, Wash., authorized Ford agency on the north side, has been appointed sole distributor here for the Fordson tractor.

The Root Electric Co., Wenatchee, Wash., has installed an electric service station for automobiles, and has taken the agency for Columbia storage batteries.

#### New Truck Dealers

John D. Reavis (Moreland)....Brawley, Cal.  
Weed & Dickenson (Moreland)....Calexico, Cal.  
Hutchison & Goodwin (Moreland),

Calipatria, Cal.  
John D. Reavis (Moreland)....El Centro, Cal.  
J. C. Phelan (Kleiber).....Fresno, Cal.  
D. M. K. Co. (Moreland).....Holtville, Cal.  
C. T. Gibson (Moreland).....Imperial, Cal.  
Kleiber Motor Truck Co. (Kleiber),

Los Angeles  
J. W. Wilkinson (Moreland)....Niland, Cal.  
A. R. Reese (Republic).....Pescadero, Cal.  
Charles M. Idler (Moreland)....Riverside, Cal.  
Meister & Sons Co. (Kleiber)....Sacramento  
E. D. Seifert (Kleiber).....San Jose, Cal.  
California Garage (Moreland),

San Luis Obispo, Cal.  
Cavanaugh & Hansen (Moreland),  
San Luis Obispo, Cal.  
Conklin & Wood (Moreland),

Santa Barbara, Cal.  
Western Motor Sales Co. (Kleiber)....Seattle  
James Howard (Moreland).....Seeley, Cal.  
Kleiber Motor Truck Co. (Kleiber),

Stockton, Cal.  
Waterman & Crane (Moreland), Ventura, Cal.  
McCracken Motor Co. (Moreland)

Portland, Ore.  
Manley Auto Co. (Grant)....Portland, Ore.  
Hainsworth Motor Car Co. (Wilson)....Seattle  
Mitchell Motor & Service Co., Inc. (Grant),

Seattle, Wash.  
McCracken Motor Co. (Moreland)  
Seattle, Wash.

Robins & Co. (Columbia). Waterville, Wash.

#### New Garages

J. A. Ducotey.....Grass Valley, Cal.  
Ace Garage.....Oakland, Cal.  
R. A. Lebert.Sixth and A Streets, San Diego  
R. L. Lebert..Sixth and A Streets, San Diego  
Pacific Garage.....Santa Cruz, Cal.  
J. F. Harris.....Watsonville, Cal.  
L. D. Rowe.....Aberdeen, Wash.  
Palouse Garage.....Palouse, Wash.

#### SOUTH

The Herff Motor Co., Memphis, Tenn., has secured the distribution of the J. & D. tire for Arkansas, Tennessee, Alabama and Mississippi.

#### New Truck Dealers

Seaboard Motor Truck Co. (Rainier),  
Norfolk, Va.  
Atlantic Motor Co. (Rainier)....Richmond, Va.

#### CANADA

George G. Barrons, Vancouver, B. C., has taken over the management of the Franklin Motor Car Co., Ltd., and will occupy a new building now being erected at Granville and Pacific Streets.

#### EAST

#### New Garages

Stewart Brothers,  
1139 Vine Street, Philadelphia  
Frankford Avenue Garage Co.,  
3070 Frankford Avenue, Philadelphia  
John Searles Estate,  
2449 N. Hancock Avenue, Philadelphia  
Joseph Scatchard Sons,  
Chelton Avenue, Philadelphia  
Stephen Folm,  
6504 N. Eighth Street, Philadelphia

#### New Truck Dealers

Oldsmobile Sales Co. (Acason),  
Washington, D. C.  
Moody Garage (Rainier).....Lowell, Mass.  
Murray O'Neill (Rainier),

New Bedford, Mass.  
Thomas F. Nichols (Rainier).Taunton, Mass.  
Forest City Garage (Rainier)....Portland, Me.  
Fred H. Cone & Co. (Rainier),

171 Front Street, New York  
(For Dutch East Indies.)  
Murray Motor Sales Co. (Schacht),  
Philadelphia

Narragansett Motor Co. (Garford),  
Narragansett, R. I.  
T. B. Aldrich (Rainier).....Providence

#### MOUNTAIN.

The Binford-Kimball Motor Co., Ogden, Utah, has been appointed distributor of the Fordson tractor for the state of Utah.

#### New Truck Dealers.

Norton Buick Auto Co. (Moreland)....Denver  
J. B. Wainwright (Kleiber).....Reno

#### FOREIGN.

#### New Truck Dealers.

American Hawaiian Motors Corp. (Kleiber)  
Honolulu, Hawaii  
Volcano Stables Co. (Kleiber),  
Hilo, Hawaii

#### MIDDLEWEST.

John P. Goeden, proprietor of Goeden's Garage at 917 Fifteenth Avenue, East Moline, Ill., has sold his business to John Livingston.

The Quincy Overland Co. has leased new quarters at 609 Vermont Avenue, East Moline, Ill., and expects to move as soon as the improvements are finished. D. R. Yantes is local manager and L. A. Chapman has been appointed district manager.

The People's Garage, Marion, Ind., has moved to a new building at 214 East Second Street.

Winger & Whiteman have taken over the Winger & Dawson Garage, Marion, Ind.

A. W. Wilkinson has opened the Sixth Street Vulcanizing Co. in Peru, Ind.

Malsh Brothers, Sharpville, Ind., are successors to Croddy & Malsh.

The Gratiot Tire & Auto Supply Co., Detroit, has opened a tire service store at 148 Gratiot Avenue. It has installed a curb-gasoline station and will do vulcanizing and repair work.

Don M. Harris, Detroit, distributor of the Acason truck, has moved into new showrooms at 554-560 Grand River Avenue.

The J. L. Moss Rebuilt Truck Co., Detroit, has opened a branch in Buffalo. This is the fifth branch opened this year, the others being in Pittsburgh, Cleveland, Toledo and Chicago.

Bernard Schram, Escanaba, Mich., has opened a washing, greasing and storage station at 405 Ludington Street.

L. R. Stander, Grand Rapids, has opened a vulcanizing shop at 214 Division Avenue, South, to be styled the Stander Vulcanizing Co.

The Horton-Harris Co., Cleveland, has leased the building at 1555 Hamilton Avenue, Northeast, and will use it as a delivery station for the transportation department of the company.

The Camel Tire Co., Sandusky, Ohio, has been opened with George E. Harter, former automobile editor of the Toledo Times, as manager.

Walker & Walker, Toledo, have moved into a new 2-story building, where they overhaul and rebuild cars. The structure contains 10,000 sq. ft. of floorspace.

The H. A. Husted Co., Youngstown, Ohio, has opened its new supply store at Boardman and Hazel Streets. The company will do a retail and wholesale business throughout the United States, and plans to establish branches in Pittsburgh, Detroit, Cleveland and other large cities next year to distribute accessories.

The Hoffmaster-Gifford Co., Youngstown, Ohio, has leased the building formerly occupied by the Goodyear branch and will carry a stock of both pneumatic and solid tires. A vulcanizing plant will be installed.

Frank W. Mosel, Madison, Wis., has been appointed Paige dealer in Dane county and will maintain service and sales headquarters in the new garage of the Auto Service Co., 213 East Washington Avenue, Madison.

Robert Flicker, Phillips, Wis., has opened a tire shop and vulcanizing and repair works.

The Tomahawk Garage, Tomahawk, Wis., has been reopened under new ownership and is making a specialty of motor car and truck repairs and general machine work.

#### New Garages.

Bluff City Garage Co.....Alton, Ill.  
J. M. Brownback.....Decatur, Ill.  
O. Peterson.....East Moline, Ill.  
F. E. Harvey.....East Moline, Ill.  
Ziegler & Mason.....Moline, Ill.  
McDowell & Jobst.....Peoria, Ill.  
U. S. Garage.....Quincy, Ill.  
Washington Auto Sales Co....Springfield, Ill.  
Koepke Brothers.....Davenport, Iowa  
Hudson Service Co. (addition)

Fond du Lac, Wis.  
Kaufmann Bros. Livery.....Milwaukee  
Oscar L. Plumpton.....Washburn, Wis.

#### New Truck Dealers.

Ohio Garage Co. (Stewart),  
Youngstown, Ohio  
Steiner & McGary (Brockway),  
Youngstown, Ohio  
S. Y. Brigham Motor Co. (Stewart)....Toledo  
Achen Motor Car Co. (White)....Milwaukee

#### NORTHWEST.

Cora Cheney, Bloomfield, Iowa, has bought a half interest in the Barton Garage.

W. C. Allen and J. A. Albee have bought the Blue Grass Garage, Carlton, Iowa.



### Philadelphia to Cut Garage Bill

PHILADELPHIA, June 28—The City of Philadelphia is considering the establishment of a large central municipal garage, as the motorization of city-owned and city-leased vehicles is proceeding so rapidly that some such step, the officials believe, will have to be taken soon. The decision, just made, to abandon all the horse-drawn vehicles of the Division of Weights and Measures which already has four motor cars in use, was the direct factor in turning the city's attention to a central garage.

Ranging from limousines to roadsters, the city government's fleet of automobiles now embraces more than 100 motor cars; counting the motor engines and patrols of the police and fire bureaus, the municipality now has 233 motor vehicles of all kinds and classes, the Mayor, Thomas B. Smith, heading the list with a \$6,100 limousine.

The book value of the municipal motor fleet, according to City Controller Walton, now amounts approximately to \$600,000. The cost of storing and caring for these cars amounts to more than \$100,000 a year.

City officials argue that if all the municipal motor cars were housed in an official garage at relatively small cost, within five or ten minutes' run of City Hall, the saving in storage charges would be considerably in excess of the carrying charges on any building that might be procured, or even erected for that purpose.

### Big Garage For Wilmington

WILMINGTON, DEL., June 28—Dr. Samuel G. Elbert, a wealthy local colored physician, has filed plans with Building Inspector Preston for what will be one of the largest and best appointed garages in the city. It will be at the northeast corner of Tenth and French Streets and will cover about a quarter of a block and will be three stories high. The cost will be about \$95,000. It will be of concrete and steel construction and will be built by the Concrete Construction Co. of Philadelphia. Wallace E. Hance of Wilmington is the architect. It will house a general garage business, including storage, care and repairs to cars.

### Mexico Adopts Truck Haulage

TAMPICO, MEXICO, June 28—The Tampico Auto Sales Co. has inaugurated a regular motor truck service here for the transportation of baggage and the handling of a general transfer business. This new service takes the place of the old cargador system which has been in operation in Mexico from time immemorial. Cargadors are men who carry trunks and other heavy loads upon their backs. They are licensed by the different municipalities throughout the country and have long been one of the picturesque features of Mexican life. Practically all the moving of furniture and household goods generally is done by these cargadors. It is not unusual for these men to carry pianos and other heavy articles long dis-

tances. Whether or not the new motor truck service which has been inaugurated here will be able to compete with the cargadors remains to be seen.

### Spooner Resigns from Automotive Show

CHICAGO, June 28—F. Ed. Spooner, who was appointed chairman of the truck committee of the Automotive and Accessories Exposition, Inc., which is to hold a show on Chicago's Municipal Pier, Sept. 14-21, has resigned. His resignation was due to pressure of other business and was filed shortly after his appointment.

### Goodyear Sales at Record Volume

AKRON, June 28—Sales of the Goodyear Tire & Rubber Co. for the month of April aggregated \$14,881,933, the largest month in the company's history and a rate which if continued for a year would mean a gross of \$178,000,000 for the period. Sales for the fiscal year ended Oct. 31, 1917, totaled \$111,450,643. For the first 6 months of the present fiscal year ended April 30, sales totaled \$60,461,804, which is \$17,220,754 in excess of the corresponding period of the previous year, or a 40 per cent gain.

### Personnel Changes at Federal

DETROIT, June 28—T. C. Beal, formerly commercial agent for the Michigan Central Railroad at Pittsburgh, has been appointed traffic manager of the Federal Motor Truck Co., succeeding H. J. St. Aubin, who has been drafted. George F. Currie, cashier, has resigned to join the colors.

### United Service Moves Detroit Office

DETROIT, June 28—The general offices of the United Motors Service, Inc., Detroit, have been moved from 3066 West Grand Boulevard to 782 Woodward Ave-

nue, where the company will operate exclusively the national system of factory service branches for the Dayton Engineering Laboratories Co., manufacturer of Delco systems; the Klaxon Co., Newark, N. J., and the Remy Electric Co., Anderson, Ind., and Detroit.

### John Brock's Service Policy

This policy is used by Brock's Garage, Trenton, N. J. What do YOU think of it? And what do YOU think of all the dealers in the United States adopting a uniform service policy of simple form, something like this? Let's have YOUR service policy if you think it is better than this one:

#### SERVICE POLICY

FIRST—It is our intention to give each and every purchaser of a car fair and business-like treatment. Should any customer not receive such treatment, we ask in good faith to be so advised.

SECOND—We will make all necessary repairs and adjustments without charge for one month after delivery of a new car, provided that the car has not been tampered with or injured through accident.

THIRD—We will install, without charge for labor, any parts that may be replaced as defective by any company we represent or ourselves, for a period of ninety days after date of delivery of the car.

BROCK'S GARAGE, Inc.

### Changes at Saxon

DETROIT, June 29—The Saxon Motor Car Corp. has moved its offices and is now occupying the building formerly used by the Pfeiffer Brewing Co. This building is situated across the street from the plant and is much more convenient than the vacated location which was several blocks away. The latter will be occupied by the Lalley Electric Lighting Co. J. H. W. Mackie, who has been an assistant sales manager of the Saxon company since February, has been promoted to the position of general sales manager to succeed H. S. Benjamin, resigned.

## Coming Events

### Racing

Cincinnati ..... Cincinnati Speedway ..... July 4

### Shows

Stanley, N. Y. ....	Tractor demonstrations, New York State Food Commission; Calvin J. Huson, Director.	July 4
Columbus ..... Ohio Automobile Trade Association.	State meeting.	July 10
Auburn, N. Y. ....	Tractor demonstration (F. L. Depew farm).	July 13
Syracuse, N. Y. ....	Tractor demonstration.	July 27
*Orange County, N. Y. ....	Tractor demonstrations, New York State Food Commission; Calvin J. Huson, Director.	Aug. 1
Fulton, N. Y. ....	Tractor demonstration (near Fair Grounds).	Aug. 6
*Columbia County, N. Y. ....	Tractor demonstrations, New York State Food Commission; Calvin J. Huson, Director.	Aug. 15
Indianapolis, Ind. ....	Automotive Show, Indiana State Fair, Indianapolis Automobile Trade Association; John Orman, Manager.	Sept. 2-7
*Canada ..... Tractor demonstrations		Sept. 17-18-19
Dallas, Tex. ....	Seventh Annual Automobile Show.	Oct. 14-17
Dallas, Tex. ....	Seventh Annual Texas Automobile Show.	Oct. 14-27
Chicago, Ill. ....	Convention and Automotive Equipment Exhibit.	Oct. 28-Nov. 2

\*Date and place not definitely fixed.

# Passenger Cars

# MOTOR WORLD GUIDE

# Passenger Cars

This table appears in the first issue every month. It is corrected every month and brought up to date.

MAKE AND MODEL	Price	No. of Cylinders	Bore and Stroke, Inches	S.A.E. H.P.	Piston Displacement	High Gear Ratio	Make of Engine	Cylinder Shape	Camshaft Drive	Water Circulation	LUBRICATION		ELECTRIC SYSTEM		IGNITION		CARBURETION		TRANSMISSION				RUNNING GEAR				BEARINGS											
											System	Type of Pump	Make	Voltage	Make	Plug	Make of Carburetor	Fuel Feed	Clutch Type	Location	Forward	Make	Final Drive	Car Drives Through	Rear Axle Type	Make of Rear Axle	Torque Taken By	Wheelbase	Tires	Rims	Wheels	Rear Springs	Make of Speedometer	Number Crankshaft Bearings	Gearset	Rear Axle	Front Wheel	
Abbott.....	6-60 \$1595	6	3 1/2 x 3 1/2	29.4	303.1	4.30-1	Cont.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	122	34x4	SS	Wd	S-E	Stewart	3 B	BR	R
Allen.....	4-100 1085	4	3 1/2 x 3 1/2	22.5	220.9	4.25-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.P.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	112	32x3	SS	Wd	S-E	Stewart	3 B	BR	R
American.....	B 1595	6	3 1/2 x 3 1/2	23.3	230.1	4.42-1	Cont.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	120	32x4	SS	Wd	S-E	Stewart	3 B	BR	R
Anderson.....	20 1465	6	3 1/2 x 3 1/2	25.3	224.0	4.58-1	Cont.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	120	32x4	SS	Wd	S-E	Stewart	3 B	BR	R
Apperson.....	400-F 1925	8	3 1/2 x 3 1/2	29.4	303.1	4.25-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	130	34x4	SS	Wd	S-E	Stewart	3 B	BR	R
Apperson.....	8-18 3500	8	3 1/2 x 3 1/2	33.8	331.8	4.25-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	130	34x4	SS	Wd	S-E	Stewart	3 B	BR	R
Apperson.....	8th Anniversary	8	3 1/2 x 3 1/2	33.8	331.8	4.25-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	130	34x4	SS	Wd	S-E	Stewart	3 B	BR	R
Auburn.....	6-39 1345	6	3 1/2 x 3 1/2	25.3	224.0	4.42-1	Cont.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.P.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	120	32x4	SS	Wd	S-E	Stewart	3 B	BR	R
Auburn.....	6-44 1685	6	3 1/2 x 3 1/2	29.4	303.1	4.08-1	Cont.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.P.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	120	32x4	SS	Wd	S-E	Stewart	3 B	BR	R
Austin.....	3750	12	2 1/2 x 2 1/2	39.7	389.5	3.75-1	Widly.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	142	34x4	QD	Wd	D Cant.	Stewart	3 B	BR	R
Ball.....	18 995	4	3 1/2 x 3 1/2	22.5	187.7	4.40-1	G.B.&S.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	114	31x4	QD	Wd	Cant.	Stewart	3 B	BR	R
Biddle.....	H 2650	4	3 1/2 x 3 1/2	22.5	226.4	4.40-1	Buda	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.P.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	121	32x4	QD	Wd	S-E	Stewart	3 B	BR	R
Bour-Davis.....	18A 1680	4	3 1/2 x 3 1/2	22.5	220.0	4.00-1	Cont.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.P.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	118	32x4	QD	Wd	S-E	Stewart	3 B	BR	R
Bour-Davis.....	18B 1785	6	3 1/2 x 3 1/2	29.4	303.0	4.07-1	Cont.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.P.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	118	32x4	QD	Wd	S-E	Stewart	3 B	BR	R
Bour-Davis.....	Chassis 5500	4	3 1/2 x 3 1/2	25.6	276.0	4.25-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.P.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	125	34x4	SS	Wd	Cant.	Stewart	3 B	BR	R
Bour-Davis.....	B-24 825	4	3 1/2 x 3 1/2	16.3	163.0	4.25-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.P.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	104	30x3	C	Wd	S-E	Stewart	3 B	BR	R
Bour-Davis.....	E-4-34 E-4-35 795	4	3 1/2 x 3 1/2	18.2	170.0	4.08-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.C.	Unit X	Unit X	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	106	31x4	C	Wd	S-E	Stewart	3 B	BR	R
Bour-Davis.....	E-6-44-45 1265	6	3 1/2 x 3 1/2	27.3	242.0	4.08-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.C.	Unit X	Unit X	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	118	34x4	SS	Wd	S-E	Stewart	3 B	BR	R
Bour-Davis.....	E-6-44-45 1495	6	3 1/2 x 3 1/2	27.3	242.0	4.08-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	118	34x4	SS	Wd	Cant.	Stewart	3 B	BR	R
Bour-Davis.....	E-6-44-45 1495	6	3 1/2 x 3 1/2	27.3	242.0	4.08-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	118	34x4	SS	Wd	Cant.	Stewart	3 B	BR	R
Bour-Davis.....	E-6-44-45 1495	6	3 1/2 x 3 1/2	27.3	242.0	4.08-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	118	34x4	SS	Wd	Cant.	Stewart	3 B	BR	R
Bour-Davis.....	E-6-44-45 1495	6	3 1/2 x 3 1/2	27.3	242.0	4.08-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	118	34x4	SS	Wd	Cant.	Stewart	3 B	BR	R
Bour-Davis.....	E-6-44-45 1495	6	3 1/2 x 3 1/2	27.3	242.0	4.08-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	118	34x4	SS	Wd	Cant.	Stewart	3 B	BR	R
Bour-Davis.....	E-6-44-45 1495	6	3 1/2 x 3 1/2	27.3	242.0	4.08-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	118	34x4	SS	Wd	Cant.	Stewart	3 B	BR	R
Bour-Davis.....	E-6-44-45 1495	6	3 1/2 x 3 1/2	27.3	242.0	4.08-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	118	34x4	SS	Wd	Cant.	Stewart	3 B	BR	R
Bour-Davis.....	E-6-44-45 1495	6	3 1/2 x 3 1/2	27.3	242.0	4.08-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	118	34x4	SS	Wd	Cant.	Stewart	3 B	BR	R
Bour-Davis.....	E-6-44-45 1495	6	3 1/2 x 3 1/2	27.3	242.0	4.08-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	118	34x4	SS	Wd	Cant.	Stewart	3 B	BR	R
Bour-Davis.....	E-6-44-45 1495	6	3 1/2 x 3 1/2	27.3	242.0	4.08-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	118	34x4	SS	Wd	Cant.	Stewart	3 B	BR	R
Bour-Davis.....	E-6-44-45 1495	6	3 1/2 x 3 1/2	27.3	242.0	4.08-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	118	34x4	SS	Wd	Cant.	Stewart	3 B	BR	R
Bour-Davis.....	E-6-44-45 1495	6	3 1/2 x 3 1/2	27.3	242.0	4.08-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	118	34x4	SS	Wd	Cant.	Stewart	3 B	BR	R
Bour-Davis.....	E-6-44-45 1495	6	3 1/2 x 3 1/2	27.3	242.0	4.08-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	118	34x4	SS	Wd	Cant.	Stewart	3 B	BR	R
Bour-Davis.....	E-6-44-45 1495	6	3 1/2 x 3 1/2	27.3	242.0	4.08-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	118	34x4	SS	Wd	Cant.	Stewart	3 B	BR	R
Bour-Davis.....	E-6-44-45 1495	6	3 1/2 x 3 1/2	27.3	242.0	4.08-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	118	34x4	SS	Wd	Cant.	Stewart	3 B	BR	R
Bour-Davis.....	E-6-44-45 1495	6	3 1/2 x 3 1/2	27.3	242.0	4.08-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.	3	3	Muncie	Sp-B	Sp-B	Sp-B	Sp-B	Salabry	Spring	118	34x4	SS	Wd	Cant.	Stewart	3 B	BR	R
Bour-Davis.....	E-6-44-45 1495	6	3 1/2 x 3 1/2	27.3	242.0	4.08-1	Om.	L	H	P	Sp-Pr	P	Remy	6	Remy	1/2	Stang	V.D.	Unit M.	Unit M.																		

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## PASSENGER CARS—Continued

MAKE AND MODEL	No. of Cylinders	Bore and Stroke, Inches	S.A.E. H.P.	Piston Cubic Displacement	High Gear Ratio	Make of Engine	Cylinder Shape	Camshaft Drive	Water Circulation	LUBRICATION		ELECTRIC SYSTEM		IGNITION		CARBURETION		TRANSMISSION				RUNNING GEAR				BEARINGS								
										System	Type of Pump	Make	Voltage	Make	Plug	Make of Carburetor	Fuel Feed	Clutch Type	Location	Forward	Speeds	Make	Final Drive	Car Drives	Rear Axle Type	Make of Rear Axle	Torque Taken By	Wheelbase	Tire	Rims	Wheels	Make of Speedometer	Number Crankshaft Bearings	Gearset
Dakland	6	2 1/4 x 4 1/4	19.0	177.0	4.50-1	North	L	H	P	Pr	G	Remy-2	6	Remy	Marvel	V. C.	Unit M.	3	Warner	Bevel	Sp. B.	Springs	F	West M.	Springs	112	32 1/4	SS	S.E.	Stewart	3	Brp.	BR	B.
Oldsmobile	6	2 1/4 x 4 1/4	19.0	177.0	4.58-1	North	L	H	P	Pr	G	Remy-2	6	Remy	Johnson	V. C.	Unit M.	3	North	Sp. B.	Springs	F	West M.	Springs	112	32 1/4	SS	S.E.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	2 1/4 x 4 1/4	16.4	246.7	4.92-1	Ovn	L	H	P	Pr	G	Delco-2	6	Delco	Ball	V. C.	Unit M.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	8	3 1/4 x 4 1/4	26.9	149.3	4.76-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Smilg.	V. D.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	18.2	178.9	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	27.2	240.5	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	25.3	224.0	4.60-1	Cont	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4 x 4 1/4	38.4	331.8	4.00-1	Ovn	L	H	P	Pr	G	A-Lite-2	6	Conn	Tiltlen	V. C.	Unit X.	3	Ovn	Sp. B.	Springs	F	West M.	Springs	120	34 1/4	SS	Opt. Trans.	Stewart	3	Brp.	BR	R.	
Oldsmobile	4	3 1/4																																



Lamp  
Bulbs

## MOTOR WORLD GUIDE

Lamp  
Bulbs

Car and Model	HEAD LAMPS Volt. Cp.	SIDE LAMPS Volt. Cp.	TAIL LAMP Volt. Cp.	DASH LAMP Volt. Cp.	Fuses Amp.	Wiring System	Type of Dimmer	Remarks	Car and Model	HEAD LAMPS Volt. Cp.	SIDE LAMPS Volt. Cp.	TAIL LAMP Volt. Cp.	DASH LAMP Volt. Cp.	Fuses Amp.	Wiring System	Type of Dimmer	Remarks	
Abbott-Detroit	6-8	15	4H	2	6-8	2	S	Dash Edison D.	Lexington... 6R	7	30	6	2	4	15	S	D. Bulb	Dash lamp Edison D.
Allen	6-8	18	6-8	2	6-8	2	S	Dash lamp double.	Liberty	7	32	6	2	4	5	S	Hollands	Spotlight, 7 v., 21 cp., double contact.
American	6-8	15	4H	2	3-4	2	S	Warner lens.	Locomobile	6-8	15	6	2	4	10	S	Resist.	Tonneau & Steplights 6-8 v., 2 cp.
Anderson	6-8	21	6-8	4	6-8	2	D	Resist.	McFarlan	6-8	24	6-8	2	6-8	10	S	Warner lens.	Dash lamp Edison D.
Apperson	6-8	18	6-8	2	6-8	2	D	Resist.	Madison	6-8	15	6-8	2	6-8	5	S	Resist.	Dash lamp Edison D.
Auburn 39 B	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Mailbohm A	12	18	12	4	6	None	S	Resist.	Tonneau & Steplights 6-8 v., 2 cp.
Auburn 44	6-8	18	12	2	6-8	2	S	Dash Edison D.	Marmon B	6-8	18	6-8	2	6-8	10	S	Warner lens.	Dash lamp Edison D.
Austin	6-8	24	4H	4	6-8	2	S	Dash Edison D.	Maxwell	34	24	6-8	2	6-8	20	S	Resist.	Dash lamp Edison D.
Bell	6-8	18	4H	2	6-8	2	S	Dash Edison D.	Mercer	25	16	24	6-8	4	20	S	Resist.	Dash lamp Edison D.
Biddle	12-16	40	4H	2	6-8	2	S	Dash Edison D.	Metz	25	16	12-16	2	12-16	20	S	D bulb.	Dash lamp Edison D.
Brewster	6-8	21	4H	2	6-8	2	S	Dash Edison D.	Moline-Knight	6-8	15	6-8	2	6-8	50	S	Shad. rays	Dash lamp Edison D.
Briscoe	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Monroe	6-8	15	6-8	2	6-8	20	S	Series	Dash lamp Edison D.
Buick	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Murray	70T	18	6-8	2	6-8	20	S	Deflect	Dash lamp Edison D.
Cadillac	6-8	18	6-8	2	3-4	2	S	Hollands	Nash	6-8	15	6-8	2	6-8	20	S	D. Bulb	Dash lamp Edison D.
Case	6-8	18	4H	2	6-8	2	S	Hollands	National	6-8	18	6-8	2	6-8	15	S	Warner lens.	Dash lamp Edison D.
Chalmers	6-8	15	6-8	2	6-8	2	S	Hollands	Nelson	12-16	30	12-16	6H	12-16	5-30	S	Warner lens.	Dash lamp Edison D.
Chandler	6-8	18	6-8	2	6-8	2	S	Dash Edison D.	Oakland 31-B	6-8	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison S.
Cheriot	4-30	12	6-8	2	6-8	2	S	Dash Edison D.	Oldsmobile	37	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Chevrolet	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Olympian	6-8	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Chevrolet	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Oreland	6-8	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Chevrolet	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Owen	36	28	21	14	28	20	S	Series	Dash and tail Edison S.
Cole	870	21	6-8	2	6-8	2	S	Dash Edison D.	Owen M-25	18	21	14	4H	14	2	S	Series	Headlamps Edison S.
Columbia	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Packard	6-45	15	6-8	4H	6-8	2	S	Warner lens.	Dash lamp Edison D.
Commonwealth	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Aux. headlights, 6 cp.	Dash lamp Edison D.
Crawford	6-40	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	D. Bulb.	Dash lamp Edison D.
Crow-Elkhart	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Warner lens.	Dash lamp Edison D.
Cunningham	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Sutterly	Dash lamp Edison D.
Daniels	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Davis	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Dixie Flyer	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Dodge	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Dodge Brothers	12-16	22	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Dodge Brothers	12-16	22	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Dorris	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Dort	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Elgin	6-8	21	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Elcar	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Empire	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Fiat	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Ford	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Franklin	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
F. R. P.	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Glide	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Grant	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Halladay	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Harradine	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Haynes	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Holter	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Hudson	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Hupmobile	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Inter-State	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Jackson	349	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Jones	27ABC	18	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Jordan	5-60	18	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
King	F	18	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Kissel	6-8	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.
Kline	6-38	15	6-8	2	6-8	2	S	Dash Edison D.	Piercer	6-45	15	6-8	4H	6-8	2	S	Resist.	Dash lamp Edison D.

ABBREVIATIONS:—C.B.—Circuit Breaker. Candel—Candelabra. D.—Double wiring system. E.D.—Edison double contact. E.S.—Edison single contact. H.—Small bulbs in headlamps for city driving. Resist.—Resistance. S.—Single wiring system. Series—Series connection.

Tires  
and Tubes

## MOTOR WORLD GUIDE

Tires  
and Tubes

This table appears in the first issue every month. It is corrected every month and brought up to date.

Name	Trade Name and Tread	28.3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37½x5	38½x5
ACME	Plain	17.60	18.90		25.30	26.30	26.80		\$85.10	36.50	37.70	39.00					53.10	54.60	56.30		63.50	65.50	67.50		
	Kam Tread	20.20	\$19.70		\$26.60	\$27.60	28.20		\$86.90	38.50	39.70	41.00					55.80	57.30	59.10		66.70	68.90	70.70		
	Dimple	20.20	21.60		\$30.10	\$30.80	30.80		\$40.40	42.10	43.60	45.00					61.00	62.80	64.70		72.90	75.00	77.60		
	Hemisphere	\$22.70	\$23.70	4.55	31.90	33.90	36.00	6.00	\$44.60	46.10	48.00	49.40	51.00	52.90		9.15	9.30	9.45	9.70	9.95	73.20	\$80.30	\$82.70	\$85.40	
ADVANCE	Gray and Red Tubes	4.05	4.25		5.45	5.65	6.00	6.45	6.85	7.05	7.30	7.45					q607.10	q607.10	q607.10		\$80.30	\$82.70	\$85.40		
	Plain	\$14.00	\$14.75		\$19.20	\$20.20	22.45	\$26.20	\$29.40	30.00	31.40	32.05	33.15	34.15		\$41.85	43.15	45.20	45.90	47.80	\$51.60	\$54.60	\$58.00		
	Non-Skid	\$14.70	\$15.50		\$20.10	\$21.25	23.55	\$27.45	\$30.80	31.45	32.85	33.70	34.65	35.85		\$43.05	45.45	47.40	48.30	50.15	\$54.10	\$57.35	\$60.00		
	Triple A Non-Skid	\$15.05	\$15.90	20.65	20.45	21.45	24.80	32.65	33.90	33.90	35.30	35.90	37.50	38.00			48.30	50.10	50.70	52.60	57.70	57.75	59.90		
AJAX	Non-Skid	18.85	17.70		\$23.50	24.45	27.85	32.65	36.90	37.50	38.95	39.55	41.15	41.65			51.90	53.15	54.95	55.55	57.40	62.55	64.75		
	Road King	16.20	17.10		21.95	23.05	26.70	35.75	36.40	38.00	38.60	40.30	40.80	42.50		52.65	53.85	56.30	57.25	59.30	67.25	67.55	69.40		
	Gray Tubes	3.55	3.30	3.75	4.15	4.25	4.40	4.75	5.35	5.55	5.80	5.90	6.05	6.25		7.00	7.15	7.25	7.55	7.70	9.25	9.35	9.45		
	Red Tubes	3.85	4.15	4.40	5.05	5.25	5.40	5.65	6.50	6.65	6.90	7.00	7.15	7.40		8.60	8.85	9.15	9.35	9.65	10.90	11.00	11.15		
AMAZON	Ribbed	q\$18.55	q\$18.55		q\$24.00	q\$27.70	q\$29.70	q\$38.35	q\$39.40	q\$40.05	q\$40.05	q\$40.75				q\$55.50	q\$57.15	q\$59.75	q\$60.50	q\$63.35	q\$71.35		q\$73.80		
	Non-Skid	q\$18.50	q\$19.55		q\$25.25	q\$29.10	q\$32.90	q\$38.35	q\$39.40	q\$40.05	q\$40.05	q\$40.75					q\$57.15	q\$59.75	q\$60.50	q\$63.35	q\$71.35		q\$73.80		
	Red and Gray Tubes	3.45	3.85		4.50	4.70	4.70	4.95	6.25	6.50	6.75	6.85	7.05	7.15		7.90	8.05	8.20	8.40	8.75	9.40	9.90	10.00		
	Triple A Non-Skid	17.60	18.50		22.50	24.30	28.25	35.55	36.30	38.15	39.00	40.10					53.25	55.65	56.50	59.00	65.35	66.35	69.25		
AMERICAN	Ribbed or Plain	17.60	18.50		22.50	25.30	29.25	36.55	37.40	39.25	40.10						53.25	55.65	56.50	59.00	65.35	66.35	69.25		
	Seal Brown Tubes	3.35	3.45		4.20	4.30	4.35	4.45	5.35	5.45	5.65	5.80	5.95	6.10		6.90	7.05	7.25	7.50	7.75	8.80	8.95	10.00		
	Red Indian Tubes	4.50	4.60		4.60	4.70	4.80	4.90	5.90	6.00	6.20	6.40	6.60	6.80		7.60	7.75	8.00	8.25	8.55	9.70	9.85	10.00		
	Cord Ribbed				q\$41.35	q\$41.35	q\$41.35	q\$44.50	q\$44.50	q\$45.00	q\$45.00	q\$45.50				q\$62.40	q\$63.95	q\$68.75	q\$68.75	q\$73.80	c\$77.65	c\$81.30	c\$84.40		
ARABIAN	Cord Plain	\$14.00					6.20			q\$58.00	q\$58.00	q\$59.60				9.55	9.75				11.25		11.50		
	Fluted Tread	q\$16.70	q\$16.70		q\$21.55	25.25	27.00	33.25	35.55	36.30	38.15	38.70				q\$48.30	50.55	51.60	52.75	56.45	61.30	61.30	65.60		
	Non-Skid	q\$17.00	q\$17.00		q\$23.00	27.00	27.00	35.55	36.30	38.15	38.70	39.00	41.75	41.75		q\$51.65	54.40	55.20	56.45	60.25	65.60	65.60	69.25		
	Tubes	3.30	3.35		4.15	4.30	4.35	4.75	5.30	5.45	5.50	5.75	6.25	6.50		6.95	7.25	7.35	7.55	8.25	8.95	8.95	9.40		
ARCHER	Ribbed Tread	31.15	33.50		33.50	37.00	37.00	43.00	47.85	49.10	50.45						56.75	58.15	59.50		70.40	71.25	73.90		
	Pyramid Tread	34.25	34.25		34.25	39.50	39.50	47.85	50.25	51.60	53.00						59.60	61.05	62.50		74.15	73.50	77.60		
	Gray Tubes	3.05	3.75		3.75	3.85	3.85	4.75	4.85	5.00	5.15						6.25	6.45	6.65		7.80	7.95	8.10		
	Non-Skid Card				14.00	15.00	15.00	17.75	17.75	18.00	18.30						21.00	22.00	23.00		26.50	27.00	27.00		
ARMSTRONG	Puncture-Proof Tubes																								
	Plain	\$22.00	26.80		26.80	\$28.40	30.80	\$34.80	\$40.10	41.50	42.50	43.60	48.20	51.50		\$54.20	55.90	58.60	59.40	\$61.90	68.20	\$69.90	73.10		
	Non-Skid	\$24.10	29.50		\$31.40	\$34.00	34.00	\$38.40	\$44.80	45.80	47.70	48.90	55.90	57.30		\$60.30	62.20	65.20	66.90	\$68.90	76.50	\$77.80	81.20		
	Red Tubes	4.40	5.22		5.39	5.45	5.90	5.70	6.50	6.60	6.70	6.90	7.00	7.20		8.40	8.75	9.00	9.25	9.50	10.60	10.60	10.70		
BALTIMORE	Plain Card	\$38.72	\$38.72		\$41.36	\$44.05	\$50.82	\$54.01	\$57.25	\$59.20	\$63.84	\$64.01	\$65.40	\$67.20		\$69.71	\$72.42	\$73.90	\$75.45	\$81.29	\$87.66	\$87.66	\$91.52		
	Non-Skid Card	\$43.61	\$43.61		\$46.58	\$49.61	\$57.25	\$59.20	\$63.84	\$64.01	\$65.40	\$67.20	\$69.71	\$72.42		\$73.90	\$75.45	\$77.90	\$79.45	\$81.29	\$87.66	\$87.66	\$91.52		
	Puncture-Proof Tubes				14.00	15.00	15.00	17.75	17.75	18.00	18.30						21.00	22.00	23.00		26.50	27.00	27.00		
	Concord	22.19	27.58		30.58	32.45	33.45	35.28	37.90	38.95	40.39	41.82	43.42	44.82		50.29	51.95	53.55	56.50	58.05	65.55	68.70	71.63		
BATAVIA	Box Tread	24.41	25.60		32.01	33.03	36.54	39.60	44.16	46.92	46.95	48.64	50.22	51.90		55.00	56.99	60.38	65.58	66.91	74.54	77.44	79.25		
	Wil-Lox Non-Skid	3.25	3.34		4.30	4.45	4.95	5.75	5.85	6.15	6.30	6.45	6.65	6.20		7.25	7.45	7.60	7.85	8.10	9.40	9.45	9.45		
	Security Tread	q\$15.98	q\$15.98		q\$20.65	q\$21.87	q\$24.25	q\$31.73	q\$32.40	q\$33.82	q\$34.72	q\$34.72													
	Gray Tubes	q\$15.80	q\$15.80		q\$20.05	q\$23.50	q\$23.50	q\$31.95	q\$34.30	q\$35.30	q\$36.90	q\$38.05	q\$39.50	q\$41.90	q\$42.55		q\$49.00	q\$50.00	q\$51.60	q\$56.05	c\$62.05	c\$63.35	c\$65.80		
BERGOUNGAN	Plain	q\$15.85	q\$15.85		q\$25.30	q\$25.30	c\$27.45	c\$31.20	q\$36.05	q\$37.30	c\$39.25	c\$40.10	c\$41.90	c\$42.55		c\$50.00	c\$51.60	c\$53.05	c\$56.05	c\$59.00	c\$63.35	c\$63.35	c\$65.80		
	Non-Skid	\$16.30	\$18.20		\$24.40	\$26.70	28.70	31.50	33.45	36.80	39.40	37.80	\$38.75	\$40.75		48.45	51.20	51.85	52.40	\$54.00	60.90	61.75	63.50		
	Red Tubes	\$17.05	\$20.00		\$26.25	\$28.85	29.35	34.65	36.80	39.40	41.00	\$42.60	\$44.80	\$46.80		56.35	57.05	57.65	57.65	\$59.40	66.55	68.02	69.80		
	BeSaw Non-Skid	24.25	24.25		30.30	31.35	35.05	38.00	42.30	43.70	45.00	46.55	48.10	50.75		54.60	57.90	62.75	64.10	64.10	71.35	74.15	75.90		
BOONE	BeSaw Plain	20.50	20.50		27.05	29.30	29.30	31.80	34.30	35.35	36.90	38.15	39.80	40.50		46.95	49.40	49.70	51.10	51.10	57.50	59.40	60.90		
	Smooth	14.20	15.40																						



Name	Trade Name and Trend	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
BRAENDER	Plain	s15.35	s15.75		20.20	s21.40	23.45	26.45	31.00	31.75	33.15	34.00	35.70	36.20	42.75	44.05	45.50	47.55	48.35	50.15	55.75	56.70	59.00	s91.25	s96.50
	Non-Skid	s17.80	s18.40		23.45	s24.75	27.15	31.00	36.20	37.00	38.90	39.75	41.70	42.35	50.00	51.50	53.25	55.95	56.50	58.70	65.10	66.35	69.10	s111.90	s119.75
	Gray Tubes	4.20	4.35		4.15	4.25	4.40	5.20	5.40	5.55	5.70	5.85	6.25	6.30	7.15	7.25	7.30	7.45	7.50	7.85	8.90	9.15	9.25	10.55	10.75
	Red Tubes	3.30	3.35		4.95	5.10	5.45	5.90	7.05	7.25	7.45	7.55	7.80	7.90	9.25	9.40	9.50	9.70	9.85	10.20	11.55	11.85	12.05	12.75	13.05
BRUNSWICK	Plain	qs14.65	qs15.80		qs20.05	qs21.55	qs23.50	qs26.60	qs31.30	qs31.95	qs33.50	qs34.30	qs35.85	qs36.40	qs42.75	qs44.05	qs45.50	qs47.65	qs48.35	qs50.40	qs55.80	qs56.25	qs59.20		
	Skid-Not	qs17.15	qs18.50		qs23.50	qs25.30	qs27.45	qs31.20	qs36.65	qs37.40	qs39.25	qs40.10	qs41.90	qs42.55	qs48.00	qs49.50	qs51.75	qs54.05	qs56.90	qs59.00	qs63.35	qs64.30	qs67.30		
	Ribbed Trend	qs22.90	qs24.80		qs29.90	qs31.80	qs33.95	qs38.45	qs43.75	qs44.55	qs46.50	qs47.35	qs49.00	qs50.00	qs56.00	qs57.10	qs59.20	qs61.75	qs64.05	qs67.00	qs73.80	qs74.85	qs77.50		
	Gray Tubes	3.30	3.35		3.90	4.00	4.25	4.60	5.40	5.55	5.80	5.85	6.00	6.15	7.15	7.30	7.40	7.65	7.85	8.00	9.15	9.30	9.50		
BULL	Plain	qs15.50	qs16.10		qs20.55	qs22.45	24.25	27.35	qs31.35	qs31.90	qs33.75	qs34.25	qs35.60	qs37.35	qs42.75	qs44.05	qs46.95	qs48.65	qs49.45	qs52.00	qs57.25	qs58.20	qs60.35		
	Non-Skid	qs17.40	qs18.05		qs22.95	qs24.55	27.15	31.00	qs35.45	qs36.05	qs38.15	qs38.80	qs40.85	qs42.90	qs48.00	qs49.50	qs52.50	qs54.30	qs55.30	qs57.50	qs63.35	qs64.50	qs67.10		
	Red Tubes	3.30	3.40	3.80	4.15	4.25	4.40	4.65	5.50	5.65	5.90	6.15	6.30	6.00	7.00	7.15	7.30	7.45	7.60	8.30	8.65	8.85	9.00		
	Gray Tubes	2.85	2.90	3.35	3.45	3.60	3.75	4.10	4.70	4.85	5.05	5.15	5.45	5.65	6.50	6.60	6.70	6.95	7.10	7.30	7.95	8.15	8.25		
CAPITOL	Plain	qs15.30	qs15.00		qs19.70	qs20.45	22.90	26.55	qs29.85	qs30.75	qs32.05	qs32.65	qs37.05	qs38.90	qs42.75	qs44.05	qs45.85	qs48.85	qs49.65	qs52.45	qs58.20	qs58.25	qs60.35		
	Non-Skid	qs16.35	qs16.75		qs20.20	qs21.65	23.90	28.40	qs31.35	qs32.10	qs33.45	qs34.35	qs38.90	qs40.85	qs44.00	qs45.30	qs47.10	qs49.65	qs51.00	qs53.80	qs60.10	qs60.20	qs62.90		
	Redman Tubes	3.85	3.75	3.80	4.60	4.65	4.80	5.10	6.05	6.15	6.45	6.50	6.85	7.00	7.80	7.85	8.05	8.15	8.25	9.00	9.05	9.35	9.00		
	Paragum Gray Tubes	3.40	3.35	3.35	3.90	4.25	4.35	5.00	5.20	5.35	5.60	5.70	6.25	6.50	7.15	7.15	7.30	7.40	7.50	7.70	8.80	9.35	9.00		
CARLISLE	Lightning Trend						qs24.35	qs25.30	qs26.65	qs28.40	qs30.15	qs31.90	qs33.65	qs35.40	qs40.50	qs42.15	qs43.80	qs45.45	qs47.10	qs48.75	qs52.45	qs58.20	qs60.35		
	Red Tubes						5.65	6.95	7.00	7.15					9.00	9.20	9.30	9.30	9.65	11.10	11.60	11.60	12.05	12.90	
CARSPRING	Plain	15.20	15.60	19.00	20.30	21.40	23.65	30.70	31.10	31.70	33.15	33.90	40.90	36.10			45.75	47.80	48.60	50.50	54.50	63.65	57.80		
	Non-Skid	15.95	16.40		21.25	22.40	24.70	32.15	32.65	33.20	34.80	35.65	42.90	37.95		40.55	48.00	50.20	51.00	53.10	57.25	66.80	60.70		
	Gray Tubes	3.25	3.30	3.75	4.15	4.20	4.25	5.00	5.25	5.35	5.50	5.65	6.35	6.05		6.75	7.90	7.90	7.30	7.55	8.60	9.45	8.90		
	Red Tubes	3.65	3.70	4.20	4.60	4.70	4.75	5.55	5.85	5.95	6.10	6.25	7.10	6.70		7.50	8.70	8.10	8.40	8.40	9.50	10.45	9.85		
CENTURY-PLAINFIELD	Ribbed				29.95		31.20		40.90	42.40	44.25	45.30		51.25	54.00	55.50	57.00	59.00	60.50	62.00	70.00	72.50	73.00		
	Non-Skid	21.00	22.15	3.90	26.95		32.90		42.00	44.60	46.00	46.50		54.00	56.00	58.00	60.00	62.00	64.00	66.00	72.00	76.00	77.00		
	Gray Tubes	3.70	3.90		4.75		5.00		6.00	6.20	6.40	6.60		7.45	8.00	8.20	8.50	8.70	9.00	10.00	10.50	10.75	12.50	12.75	
	Red Tubes																								
CHAMPION	Non-Skid	16.40	15.85		20.65	21.80	24.25	28.15	31.75	32.30	33.70	34.55	39.40	40.50		45.05	46.60	48.90	49.40	56.60	55.55	62.90	58.80		
	Gray Tubes	3.50	3.45	4.20	4.30	4.35	4.50	5.10	5.35	5.45	5.65	5.80	6.55	6.75		6.90	7.05	7.25	7.50	8.55	8.90	9.70	9.10		
	Red Tubes	3.85	3.80	4.30	4.60	4.75	4.80	5.60	5.90	6.00	6.20	6.40	7.20	7.45		7.60	7.75	8.00	8.25	9.30	10.65	10.65	10.00		
CHESTER	Plain	s15.50	s16.10		s20.55	s22.45	24.25	27.35	s31.35	31.90	33.75	34.25	s35.60	s37.35		s46.95	s48.65	s49.45	s52.00	s57.25	s58.20	s60.35			
	Non-Skid	s17.40	s18.05		s22.95	s24.55	27.15	31.00	s35.45	s36.05	s38.15	s38.80	s40.85	s42.90		s49.50	s51.75	s54.05	s56.90	s59.00	s63.35	s64.30	s67.30		
	Gray Tubes	3.30	3.40	3.80	4.15	4.25	4.40	4.65	5.50	5.65	5.90	6.15	6.30	6.00		6.75	7.90	7.30	7.40	8.30	9.65	8.85	8.25		
	Red Tubes	2.85	2.90	3.35	3.45	3.60	3.75	4.10	4.70	4.85	5.05	5.15	5.45	5.65		6.50	6.60	6.70	6.95	7.30	7.95	8.15	8.25		
CLEVELAND-STANDARD	Plain	22.80	22.80		28.25		32.80		40.00	41.75	43.00	45.60		51.80	52.70	53.00	55.00	56.95	59.00	65.50	68.75	75.70	73.80		
	Non-Skid	24.25	24.90		31.25	32.25	35.70	38.75	42.80	44.50	45.80	47.20	49.00	51.80		58.00	59.70	61.20	64.20	68.50	72.80	76.70	77.50		
	Gray Tubes	4.00	4.05	4.75	5.05	5.10	5.30	5.60	6.50	6.65	6.95	7.10	7.60	7.70		8.75	8.85	9.10	9.30	10.70	11.10	11.10	11.60		
	Red Tubes	3.65	3.70	4.35	4.65	4.75	4.85	5.75	5.95	6.10	6.25	6.45	6.90	6.95		7.85	7.95	8.10	8.30	9.65	9.80	9.95	10.15	11.85	
COLUMBIA	Plain	15.20	15.60	19.00	20.30	21.40	23.65	30.70	31.10	31.70	33.15	33.90	40.90	36.10		45.75	47.80	48.60	50.50	54.50	63.65	57.80			
	Non-Skid	15.95	16.40		21.25	22.40	24.70	32.15	32.65	33.20	34.80	35.65	42.90	37.95		46.55	48.00	50.20	51.00	53.10	57.25	66.80	60.70		
	Gray Tubes	3.25	3.30	3.75	4.15	4.20	4.25	5.00	5.25	5.35	5.50	5.65	6.35	6.05		6.75	7.90	7.90	7.30	7.55	8.60	9.45	8.90		
	Red Tubes	3.65	3.70	4.20	4.60	4.70	4.75	5.55	5.85	5.95	6.10	6.25	7.10	6.70		7.50	8.70	8.10	8.40	9.50	10.45	9.85			
CONVERSE	Rough Trend				qs28.10	qs32.90	36.10		43.05	44.40	45.95	47.60	48.80	50.15	qs52.45	qs54.05	qs55.65	qs58.60	63.00	64.80	72.00	74.85	77.35		
	Smooth Trend	qs21.20	qs21.20		qs27.30	qs30.10	31.75		36.75	38.10	39.50	40.90	42.10	43.45	qs47.25	qs48.70	qs49.25	qs51.55	53.25	54.70	61.65	63.65	65.25		
	Gray Tubes	3.30	3.30	3.90	4.10	4.20	4.35	5.15	5.35	5.50	5.65	5.80	6.35	6.45		6.80	6.95	7.10	7.25	7.30	8.40	9.70	9.10		
	Red Tubes	3.75	3.75	4.25	4.65	4.70	4.85	5.70	5.85	6.15	6.30	6.45	7.25	7.45		7.65	7.75	7.90	8.05	9.40	9.75	10.70	11.20	11.90	
CORTLAND	C. C. Plain	s15.50			s20.20	s21.90	23.60	s26.15	s30.95	31.60	33.05	33.75	s34.70	s35.55		s44.05	s45.45	s47.00	s48.35	s49.25	s54.20	s55.95	s57.50		
	C. C. Non-Skid	s16.35			s21.15	s22.95	24.75	s27.40	s32.40	33.15	34.55	35.45	s36.20	s36.60		s45.05	s46.25	s47.80	s50.80	s53.00	s57.05	s59.40	s75.60		
	Yankee Plain	s21.00			s26.50	s28.50	30.30	s33.00	s39.25	41.35	42.55	s44.55	s44.55	s45.65		s52.30	s53.35	s56.20	s60.20	s63.20	s71.70	s73.75	s89.60		
	Yankee Non-Skid	s23.95			s29.50	s31.65	33.80	s36.50	s43.55	45.95	47.10	48.25	s49.50	s50.60		s58.10	s59.15	s62.45	s67.10	s70.20	s79.00	s81.65	s99.55	s101.75	
CUPPLES	Rough Trend	qs22.75			qs29.75		qs31.75		qs37.50	qs39.75	qs41.50	e42.75			qs49.00	qs51.25	qs52.00	e57.00			e61.50				
	Plain Trend	18.75			24.75				5.10	5.25	5.40	5.60			6.70		8.00								
	Gray Tubes	3.15			3.80		4.00		6.10	6.20	6.35	6.55			8.40		8.65								
	Red Tubes	3.95			4.75		4.95		14.00	14.50	14.90	15.40			18.00		18.50								
CURTIS	Rhinos Inner Tubes	8.00			10.70		11.30																		
	Plain	19.10																							

**NOTE**—The letter *c* means that a **CINCHER** size is **NOT** made in this size, *n* that a **QUICK-DETACHABLE** is not made in this size, and *s* that a **STRAIGHT SIDE** is not made in this size.

## TIRES AND TUBES—Continued

Name	Trade Name and Tread	28x3	30x3	32x3	30x3 1/2	31x3 1/2	32x3 1/2	34x3 1/2	31x4	32x4	33x4	34x4	35x4	36x4	32x4 1/2	33x4 1/2	34x4 1/2	35x4 1/2	36x4 1/2	37x4 1/2	35x5	36x5	37x5	37x5 1/2	38x5 1/2
DELON	Plain Non-Skid Red Tubes	17 75 19 55 3 85	25 10 28 60 4 55	32 00 35 00 3 00	26 60 29 25 4 65	30 45 33 00 2 55	34 30 37 75 3 45	38 45 41 10 2 65	34 30 37 75 3 45	38 45 41 10 2 65	41 20 44 30 3 10	44 40 47 50 3 10	48 50 51 60 3 10	52 60 55 70 3 10	56 80 59 90 3 10	60 90 64 00 3 10	65 00 68 10 3 10	69 10 72 20 3 10	73 30 76 40 3 10	77 40 80 50 3 10	81 50 84 60 3 10	85 60 88 70 3 10	89 70 92 80 3 10	93 80 96 90 3 10	97 90 101 00 3 10
DIAMOND	Smooth Squeegee Gray Tubes Red Tubes	15 50 16 35 3 85	20 20 21 10 4 85	23 60 24 75 4 15	26 60 27 75 4 15	30 45 31 55 1 10	34 30 35 40 1 10	38 45 39 55 1 10	41 20 42 30 1 10	44 40 45 50 1 10	47 50 48 60 1 10	50 60 51 70 1 10	53 70 54 80 1 10	56 80 57 90 1 10	59 90 61 00 1 10	63 00 64 10 1 10	66 10 67 20 1 10	69 20 70 30 1 10	72 30 73 40 1 10	75 40 76 50 1 10	78 50 79 60 1 10	81 60 82 70 1 10	84 70 85 80 1 10	87 80 88 90 1 10	90 90 92 00 1 10
DOUBLE FABRIC	Ribbed Type Xtra-Ply Duo Cord Non-Skid Gray Tubes	18 00 19 10 3 45	24 00 25 10 1 10	28 00 29 10 1 10	32 00 33 10 1 10	36 00 37 10 1 10	40 00 41 10 1 10	44 00 45 10 1 10	48 00 49 10 1 10	52 00 53 10 1 10	56 00 57 10 1 10	60 00 61 10 1 10	64 00 65 10 1 10	68 00 69 10 1 10	72 00 73 10 1 10	76 00 77 10 1 10	80 00 81 10 1 10	84 00 85 10 1 10	88 00 89 10 1 10	92 00 93 10 1 10	96 00 97 10 1 10	100 00 101 10 1 10	104 00 105 10 1 10	108 00 109 10 1 10	112 00 113 10 1 10
DREADNAUGHT	Vacuum Red Ribbed Tread Super-Dreadnaught Red Tubes	20 70 21 80 1 10	24 00 25 10 1 10	28 00 29 10 1 10	32 00 33 10 1 10	36 00 37 10 1 10	40 00 41 10 1 10	44 00 45 10 1 10	48 00 49 10 1 10	52 00 53 10 1 10	56 00 57 10 1 10	60 00 61 10 1 10	64 00 65 10 1 10	68 00 69 10 1 10	72 00 73 10 1 10	76 00 77 10 1 10	80 00 81 10 1 10	84 00 85 10 1 10	88 00 89 10 1 10	92 00 93 10 1 10	96 00 97 10 1 10	100 00 101 10 1 10	104 00 105 10 1 10	108 00 109 10 1 10	112 00 113 10 1 10
DRY CLIMATE	Plain Non-Skid Red Tubes Gray Tubes	15 80 16 90 1 10	20 00 21 10 1 10	24 00 25 10 1 10	28 00 29 10 1 10	32 00 33 10 1 10	36 00 37 10 1 10	40 00 41 10 1 10	44 00 45 10 1 10	48 00 49 10 1 10	52 00 53 10 1 10	56 00 57 10 1 10	60 00 61 10 1 10	64 00 65 10 1 10	68 00 69 10 1 10	72 00 73 10 1 10	76 00 77 10 1 10	80 00 81 10 1 10	84 00 85 10 1 10	88 00 89 10 1 10	92 00 93 10 1 10	96 00 97 10 1 10	100 00 101 10 1 10	104 00 105 10 1 10	108 00 109 10 1 10
DUNLOP	Cross Groove Traction Non-Skid Tubes	27 95 29 00 1 05	32 65 33 70 1 05	37 30 38 35 1 05	42 00 43 05 1 05	46 65 47 70 1 05	51 30 52 35 1 05	55 95 57 00 1 05	60 60 61 65 1 05	65 25 66 30 1 05	69 90 70 95 1 05	74 55 75 60 1 05	79 20 80 25 1 05	83 85 84 90 1 05	88 50 89 55 1 05	93 15 94 20 1 05	97 80 98 85 1 05	102 45 103 50 1 05	107 10 108 15 1 05	111 75 112 80 1 05	116 40 117 45 1 05	121 05 122 10 1 05	125 70 126 75 1 05	130 35 131 40 1 05	135 00 136 05 1 05
DURAL	Red Tubes Gray Tubes	3 85 3 40 0 45	4 70 4 25 0 45	5 55 5 10 0 45	6 40 5 95 0 45	7 25 6 80 0 45	8 10 7 65 0 45	8 95 8 50 0 45	9 80 9 35 0 45	10 65 10 20 0 45	11 50 11 05 0 45	12 35 11 90 0 45	13 20 12 75 0 45	14 05 13 60 0 45	14 90 14 45 0 45	15 75 15 30 0 45	16 60 16 15 0 45	17 45 17 00 0 45	18 30 17 85 0 45	19 15 18 70 0 45	20 00 19 55 0 45	20 85 20 40 0 45	21 70 21 25 0 45	22 55 22 10 0 45	23 40 22 95 0 45
EHRMAN	Track and Non-Skid Tread Gray Tubes Red Tubes	16 40 17 50 1 10	20 65 21 75 1 10	24 90 26 00 1 10	29 15 30 25 1 10	33 40 34 50 1 10	37 65 38 75 1 10	41 90 43 00 1 10	46 15 47 25 1 10	50 40 51 50 1 10	54 65 55 75 1 10	58 90 60 00 1 10	63 15 64 25 1 10	67 40 68 50 1 10	71 65 72 75 1 10	75 90 77 00 1 10	80 15 81 25 1 10	84 40 85 50 1 10	88 65 89 75 1 10	92 90 94 00 1 10	97 15 98 25 1 10	101 40 102 50 1 10	105 65 106 75 1 10	109 90 111 00 1 10	114 15 115 25 1 10
EMPIRE	Smooth Gray Non-Skid Gray Non-Skid Red Card Non-Skid Gray Tubes Red Tubes	17 00 18 10 1 10	21 25 22 35 1 10	25 50 26 60 1 10	30 75 31 85 1 10	35 00 36 10 1 10	39 25 40 35 1 10	43 50 44 60 1 10	47 75 48 85 1 10	52 00 53 10 1 10	56 25 57 35 1 10	60 50 61 60 1 10	64 75 65 85 1 10	69 00 70 10 1 10	73 25 74 35 1 10	77 50 78 60 1 10	81 75 82 85 1 10	86 00 87 10 1 10	90 25 91 35 1 10	94 50 95 60 1 10	98 75 99 85 1 10	103 00 104 10 1 10	107 25 108 35 1 10	111 50 112 60 1 10	115 75 116 85 1 10
ENDURANCE	Ball Bearing Non-Skid Gray Tubes Red Tubes	3 80 4 25 0 45	4 70 4 25 0 45	5 55 5 10 0 45	6 40 5 95 0 45	7 25 6 80 0 45	8 10 7 65 0 45	8 95 8 50 0 45	9 80 9 35 0 45	10 65 10 20 0 45	11 50 11 05 0 45	12 35 11 90 0 45	13 20 12 75 0 45	14 05 13 60 0 45	14 90 14 45 0 45	15 75 15 30 0 45	16 60 16 15 0 45	17 45 17 00 0 45	18 30 17 85 0 45	19 15 18 70 0 45	20 00 19 55 0 45	20 85 20 40 0 45	21 70 21 25 0 45	22 55 22 10 0 45	23 40 22 95 0 45
FALLS	"Never Slip" Non-Skid Pure Gum Green Tubes	3 60 3 65 0 05	4 45 4 50 0 05	5 30 5 35 0 05	6 15 6 20 0 05	7 00 7 05 0 05	7 85 7 90 0 05	8 70 8 75 0 05	9 55 9 60 0 05	10 40 10 45 0 05	11 25 11 30 0 05	12 10 12 15 0 05	12 95 13 00 0 05	13 80 13 85 0 05	14 65 14 70 0 05	15 50 15 55 0 05	16 35 16 40 0 05	17 20 17 25 0 05	18 05 18 10 0 05	18 90 18 95 0 05	19 75 19 80 0 05	20 60 20 65 0 05	21 45 21 50 0 05	22 30 22 35 0 05	23 15 23 20 0 05
FEDERAL	Plain Traffic Tread Rugged Tread Card Non-Skid Gray Tubes Red Tubes	15 80 16 90 1 10	20 05 21 15 1 10	24 30 25 40 1 10	28 55 29 65 1 10	33 80 34 90 1 10	38 05 39 15 1 10	42 30 43 40 1 10	46 55 47 65 1 10	50 80 51 90 1 10	55 05 56 15 1 10	59 30 60 40 1 10	63 55 64 65 1 10	67 80 68 90 1 10	72 05 73 15 1 10	76 30 77 40 1 10	80 55 81 65 1 10	84 80 85 90 1 10	89 05 90 15 1 10	93 30 94 40 1 10	97 55 98 65 1 10	101 80 102 90 1 10	106 05 107 15 1 10	110 30 111 40 1 10	114 55 115 65 1 10
FIRESTONE	Round Tread Non-Skid Gray Tubes Red Tubes Triple Tread Non-Skid Gray Tubes Red Tubes	14 85 15 95 1 10	19 10 20 20 1 10	23 35 24 45 1 10	27 60 28 70 1 10	31 85 32 95 1 10	36 10 37 20 1 10	40 35 41 45 1 10	44 60 45 70 1 10	48 85 49 95 1 10	53 10 54 20 1 10	57 35 58 45 1 10	61 60 62 70 1 10	65 85 66 95 1 10	70 10 71 20 1 10	74 35 75 45 1 10	78 60 79 70 1 10	82 85 83 95 1 10	87 10 88 20 1 10	91 35 92 45 1 10	95 60 96 70 1 10	99 85 100 95 1 10	104 10 105 20 1 10	108 35 109 45 1 10	112 60 113 70 1 10
FISK	Gray and Black Non-Skid Red Non-Skid Ribbed Cord Non-Skid Gray Tubes	16 20 17 30 1 10	20 45 21 55 1 10	24 70 25 80 1 10	28 95 30 05 1 10	33 20 34 30 1 10	37 45 38 55 1 10	41 70 42 80 1 10	45 95 47 05 1 10	50 20 51 30 1 10	54 45 55 55 1 10	58 70 59 80 1 10	62 95 64 05 1 10	67 20 68 30 1 10	71 45 72 55 1 10	75 70 76 80 1 10	79 95 81 05 1 10	84 20 85 30 1 10	88 45 89 55 1 10	92 70 93 80 1 10	96 95 98 05 1 10	101 20 102 30 1 10	105 45 106 55 1 10	109 70 110 80 1 10	113 95 115 05 1 10
G & J	Plain "G" Anti-Skid Stalwart Tread Cord Gray Tubes Red Tubes	14 00 15 10 1 10	18 25 19 35 1 10	22 50 23 60 1 10	26 75 27 85 1 10	31 00 32 10 1 10	35 25 36 35 1 10	39 50 40 60 1 10	43 75 44 85 1 10	48 00 49 10 1 10	52 25 53 35 1 10	56 50 57 60 1 10	60 75 61 85 1 10	65 00 66 10 1 10	69 25 70 35 1 10	73 50 74 60 1 10	77 75 78 85 1 10	82 00 83 10 1 10	86 25 87 35 1 10	90 50 91 60 1 10	94 75 95 85 1 10	99 00 100 10 1 10	103 25 104 35 1 10	107 50 108 60 1 10	111 75 112 85 1 10



[illegible]

NOTE—The letter c means that a CLINCHER tire is NOT made in this size; q that a QUICK DETACHABLE is not made in this size; and s that a STRAIGHT SIDE is not made in this size.

## TIRES AND TUBES—Continued

Name	Trade Name and Tread	28.3	30.2	32.3	30x3 1/2	31x3 1/2	32x3 1/2	34x3 1/2	31x4	32x4	33x4	34x4	35x4	36x4	32x4 1/2	33x4 1/2	34x4 1/2	35x4 1/2	36x4 1/2	37x4 1/2	35x5	37x5	38x5 1/2	
HIGHWAY	Non-Skid Red Tubes Gray Tubes	qs16.35 3.85 3.40	qs15.70 3.75 3.35	4.20 3.85 3.40	qs20.20 4.00 3.60	4.65 4.25 3.85	c23.90 4.80 4.35	..... ..... .....	qs31.35 6.05 5.20	qs32.10 6.15 5.35	c33.45 6.45 5.50	c34.35 6.70 5.70	6.85 6.45 5.90	7.00 6.60 6.25	7.80 7.15 6.85	7.85 6.95 6.55	8.05 7.10 6.65	8.15 7.20 6.75	8.25 7.35 6.85	8.50 7.70 7.30	9.00 8.30 7.90	9.90 9.35 8.90	38x5 1/2	
		qs16.35 3.85 3.40	qs15.70 3.75 3.35	4.20 3.85 3.40	qs20.20 4.00 3.60	4.65 4.25 3.85	c23.90 4.80 4.35	..... ..... .....	qs31.35 6.05 5.20	qs32.10 6.15 5.35	c33.45 6.45 5.50	c34.35 6.70 5.70	6.85 6.45 5.90	7.00 6.60 6.25	7.80 7.15 6.85	7.85 6.95 6.55	8.05 7.10 6.65	8.15 7.20 6.75	8.25 7.35 6.85	8.50 7.70 7.30	9.00 8.30 7.90	9.90 9.35 8.90	38x5 1/2	
		qs16.35 3.85 3.40	qs15.70 3.75 3.35	4.20 3.85 3.40	qs20.20 4.00 3.60	4.65 4.25 3.85	c23.90 4.80 4.35	..... ..... .....	qs31.35 6.05 5.20	qs32.10 6.15 5.35	c33.45 6.45 5.50	c34.35 6.70 5.70	6.85 6.45 5.90	7.00 6.60 6.25	7.80 7.15 6.85	7.85 6.95 6.55	8.05 7.10 6.65	8.15 7.20 6.75	8.25 7.35 6.85	8.50 7.70 7.30	9.00 8.30 7.90	9.90 9.35 8.90	38x5 1/2	
HOOD	Plain Non-Skid Ribbed Tread Puritan Plain Puritan Gripper Non-Skid Hood Red and Gray Tubes	20.30 24.30 24.00 24.00 qs16.75 3.85 3.40	20.80 24.85 24.55 24.55 qs16.75 3.85 3.40	22.35 27.00 27.00 27.00 qs16.75 3.85 3.40	27.60 31.60 31.00 31.00 qs19.00 4.00 3.60	29.45 34.15 34.00 34.00 qs20.35 4.25 3.85	30.95 35.45 34.90 34.90 qs21.55 4.40 4.00	33.10 37.95 42.90 42.90 qs28.90 4.65 4.25	36.20 41.75 46.80 46.80 qs35.30 5.05 4.65	38.85 44.65 49.80 49.80 qs37.75 5.25 4.85	37.55 45.85 45.80 45.80 c38.20 5.50 5.15	38.50 48.75 48.80 48.80 c38.85 5.80 5.45	39.60 48.95 48.95 48.95 c39.05 6.10 5.75	40.65 51.45 51.45 51.45 c39.35 6.35 5.90	53.00 61.05 61.05 61.05 c43.05 6.85 6.45	53.50 63.50 63.50 63.50 c43.15 7.15 6.75	55.95 65.95 65.95 65.95 c44.75 7.55 7.15	57.40 67.40 67.40 67.40 c48.30 8.15 7.75	58.50 68.50 68.50 68.50 c50.50 8.45 8.05	59.85 69.85 69.85 69.85 c51.15 8.70 8.30	68.85 78.85 78.85 78.85 c61.45 9.40 9.00	70.20 80.20 80.20 80.20 c63.75 9.70 9.30	81.35 91.35 91.35 91.35 c65.05 10.40 10.00	92.50 102.50 102.50 102.50 c67.35 10.70 10.30
		20.30 24.30 24.00 24.00 qs16.75 3.85 3.40	20.80 24.85 24.55 24.55 qs16.75 3.85 3.40	22.35 27.00 27.00 27.00 qs16.75 3.85 3.40	27.60 31.60 31.00 31.00 qs19.00 4.00 3.60	29.45 34.15 34.00 34.00 qs20.35 4.25 3.85	30.95 35.45 34.90 34.90 qs21.55 4.40 4.00	33.10 37.95 42.90 42.90 qs28.90 4.65 4.25	36.20 41.75 46.80 46.80 qs35.30 5.05 4.65	38.85 44.65 49.80 49.80 qs37.75 5.25 4.85	37.55 45.85 45.80 45.80 c38.20 5.50 5.15	38.50 48.75 48.80 48.80 c38.85 5.80 5.45	39.60 48.95 48.95 48.95 c39.05 6.10 5.75	40.65 51.45 51.45 51.45 c39.35 6.35 5.90	53.00 61.05 61.05 61.05 c43.05 6.85 6.45	53.50 63.50 63.50 63.50 c43.15 7.15 6.75	55.95 65.95 65.95 65.95 c44.75 7.55 7.15	57.40 67.40 67.40 67.40 c48.30 8.15 7.75	58.50 68.50 68.50 68.50 c50.50 8.45 8.05	59.85 69.85 69.85 69.85 c51.15 8.70 8.30	68.85 78.85 78.85 78.85 c61.45 9.40 9.00	70.20 80.20 80.20 80.20 c63.75 9.70 9.30	81.35 91.35 91.35 91	

**NOTE**—The letter *c* means that a **CLINCHER** size is **NOT** made in this size; *a* that a **QUICK-DETACHABLE** is not made in this size, and *s* that a **STRAIGHT SIDE** is not made in this size.



Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
MARION	Plain Ribbed Non-Skid Gray Red	qs14.60 qs16.50 qs17.60 3.20 3.20	qs15.80 qs17.60 qs18.20 3.30 4.20	qs25.00 qs27.00 qs28.00 4.10 5.20	qs21.60 qs22.50 qs23.50 3.95 4.95	qs24.00 qs25.00 qs26.00 4.10 5.20	qs27.00 qs28.00 qs29.00 4.10 5.20	qs30.00 qs31.00 qs32.00 4.10 5.20	qs33.00 qs34.00 qs35.00 4.10 5.20	qs36.00 qs37.00 qs38.00 4.10 5.20	qs39.00 qs40.00 qs41.00 4.10 5.20	qs42.00 qs43.00 qs44.00 4.10 5.20	qs45.00 qs46.00 qs47.00 4.10 5.20	qs48.00 qs49.00 qs50.00 4.10 5.20	qs51.00 qs52.00 qs53.00 4.10 5.20	qs54.00 qs55.00 qs56.00 4.10 5.20	qs57.00 qs58.00 qs59.00 4.10 5.20	qs60.00 qs61.00 qs62.00 4.10 5.20	qs63.00 qs64.00 qs65.00 4.10 5.20	qs66.00 qs67.00 qs68.00 4.10 5.20	qs69.00 qs70.00 qs71.00 4.10 5.20	qs72.00 qs73.00 qs74.00 4.10 5.20	qs75.00 qs76.00 qs77.00 4.10 5.20	qs78.00 qs79.00 qs80.00 4.10 5.20	qs81.00 qs82.00 qs83.00 4.10 5.20
MASON	Plain Tread Ribbed Tread Non-Skid Gray Tubes Red Tubes	15.50 16.35 16.95 3.45 4.00	16.40 17.55 18.15 3.50 4.15	22.45 23.40 24.00 4.35 5.15	20.90 22.30 23.30 4.20 5.00	24.35 25.35 26.00 4.55 5.35	27.45 28.45 29.00 4.85 5.65	30.45 31.45 32.00 5.15 5.95	33.45 34.45 35.00 5.45 6.25	36.45 37.45 38.00 5.75 6.55	39.45 40.45 41.00 6.05 6.85	42.45 43.45 44.00 6.35 7.15	45.45 46.45 47.00 6.65 7.45	48.45 49.45 50.00 6.95 7.75	51.45 52.45 53.00 7.25 8.05	54.45 55.45 56.00 7.55 8.35	57.45 58.45 59.00 7.85 8.65	60.45 61.45 62.00 8.15 8.95	63.45 64.45 65.00 8.45 9.25	66.45 67.45 68.00 8.75 9.55	69.45 70.45 71.00 9.05 9.85	72.45 73.45 74.00 9.35 10.15	75.45 76.45 77.00 9.65 10.45	78.45 79.45 80.00 9.95 10.75	
MICHELIN	Plain Tread Universal Tread Red Tubes	qs16.45 qs18.65 3.90	qs17.15 qs19.35 4.05	qs26.15 qs28.35 4.70	qs24.75 qs26.95 4.70	qs36.15 qs38.35 5.40	qs34.75 qs36.95 5.40	qs46.15 qs48.35 6.10	qs44.75 qs46.95 6.10	qs56.15 qs58.35 6.80	qs54.75 qs56.95 6.80	qs66.15 qs68.35 7.50	qs64.75 qs66.95 7.50	qs76.15 qs78.35 8.20	qs74.75 qs76.95 8.20	qs86.15 qs88.35 8.90	qs84.75 qs86.95 8.90	qs96.15 qs98.35 9.60	qs94.75 qs96.95 9.60	qs106.15 qs108.35 10.30	qs104.75 qs106.95 10.30	qs116.15 qs118.35 11.00	qs114.75 qs116.95 11.00	qs126.15 qs128.35 11.70	
MOHAWK	Plain Non-Skid Ribbed Tread Pure Gum and Red Tubes Combination Tube Keaton	qs19.70 qs23.75 3.40	qs20.70 qs24.75 3.55	qs27.95 qs31.95 4.70	qs26.95 qs30.95 4.70	qs34.15 qs38.15 5.40	qs33.15 qs37.15 5.40	qs40.35 qs44.35 6.10	qs39.35 qs43.35 6.10	qs46.55 qs50.55 6.80	qs45.55 qs49.55 6.80	qs52.75 qs56.75 7.50	qs51.75 qs55.75 7.50	qs58.95 qs62.95 8.20	qs57.95 qs61.95 8.20	qs65.15 qs69.15 8.90	qs64.15 qs68.15 8.90	qs71.35 qs75.35 9.60	qs70.35 qs74.35 9.60	qs77.55 qs81.55 10.30	qs76.55 qs80.55 10.30	qs83.75 qs87.75 11.00	qs82.75 qs86.75 11.00	qs89.95 qs93.95 11.70	
MONARCH	Gray Tubes	3.15 3.45	3.35 3.70	4.15 4.70	4.15 4.70	4.95 5.55	4.95 5.55	5.75 6.35	5.75 6.35	6.55 7.15	6.55 7.15	7.35 7.95	7.35 7.95	8.15 8.75	8.15 8.75	8.95 9.55	8.95 9.55	9.75 10.35	9.75 10.35	10.55 11.15	10.55 11.15	11.35 11.95	11.35 11.95	12.15 12.75	
NABOB	Plain Tread Safety Traction Non-Skid Tubes	qs19.95 qs25.00 3.65	qs20.95 qs26.00 3.75	qs28.20 qs33.25 4.95	qs27.20 qs32.25 4.95	qs34.45 qs39.50 5.75	qs33.45 qs38.50 5.75	qs40.65 qs45.70 6.55	qs39.65 qs44.70 6.55	qs46.85 qs51.90 7.35	qs45.85 qs50.90 7.35	qs53.05 qs58.10 8.15	qs52.05 qs57.10 8.15	qs59.25 qs64.30 8.95	qs58.25 qs63.30 8.95	qs65.45 qs70.50 9.75	qs64.45 qs69.50 9.75	qs71.65 qs76.70 10.55	qs70.65 qs75.70 10.55	qs77.85 qs82.90 11.35	qs76.85 qs81.90 11.35	qs84.05 qs89.10 12.15	qs83.05 qs88.10 12.15	qs90.25 qs95.30 12.95	
NATIONAL	Plain Non-Skid Red Tubes	13.80 14.45 3.45	14.10 14.75 3.55	17.95 18.60 3.80	17.45 18.10 3.90	21.25 21.90 4.20	20.75 21.40 4.30	24.55 25.20 4.60	24.05 24.70 4.70	27.85 28.50 5.00	27.35 28.00 5.10	31.15 31.80 5.40	30.65 31.30 5.50	34.45 35.10 5.80	33.95 34.60 5.90	37.75 38.40 6.20	37.25 37.90 6.30	41.05 41.70 6.60	40.55 41.20 6.70	44.35 45.00 7.00	43.85 44.50 7.10	47.65 48.30 7.40	47.15 47.80 7.50	50.95 51.60 7.80	
NEEDHAM	Plain Non-Skid Tubes	qs15.85 3.00	qs17.15 3.10	qs23.10 3.35	qs22.10 3.35	qs28.10 3.60	qs27.10 3.60	qs33.10 3.85	qs32.10 3.85	qs38.10 4.10	qs37.10 4.10	qs43.10 4.35	qs42.10 4.35	qs48.10 4.60	qs47.10 4.60	qs53.10 4.85	qs52.10 4.85	qs58.10 5.10	qs57.10 5.10	qs63.10 5.35	qs62.10 5.35	qs68.10 5.60	qs67.10 5.60	qs73.10 5.85	
NEWCASTLE	Plain Non-Skid Tubes	16.00 17.00	16.00 17.00	24.30 25.50	24.30 25.50	32.60 33.80	32.60 33.80	40.90 42.10	40.90 42.10	49.20 50.40	49.20 50.40	57.50 58.70	57.50 58.70	65.80 67.00	65.80 67.00	74.10 75.30	74.10 75.30	82.40 83.60	82.40 83.60	90.70 91.90	90.70 91.90	99.00 100.20	99.00 100.20	107.30 108.50	
NORWALK	Plain Non-Skid Gray Tubes Red Tubes	qs21.70 3.30 3.65	qs22.85 3.35 3.70	qs28.85 3.95 4.35	qs27.95 3.95 4.35	qs33.95 4.55 4.95	qs33.05 4.55 4.95	qs39.05 5.15 5.55	qs38.15 5.15 5.55	qs44.15 5.75 6.15	qs43.25 5.75 6.15	qs49.25 6.35 6.75	qs48.35 6.35 6.75	qs54.35 6.95 7.35	qs53.45 6.95 7.35	qs59.45 7.55 7.95	qs58.55 7.55 7.95	qs64.55 8.15 8.55	qs63.65 8.15 8.55	qs69.65 8.75 9.15	qs68.75 8.75 9.15	qs74.75 9.35 9.75	qs73.85 9.35 9.75	qs79.85 9.95 10.35	
PALMER	Tubes	7.20	7.20	8.15	8.15	9.10	9.10	10.05	10.05	11.00	11.00	11.95	11.95	12.90	12.90	13.85	13.85	14.80	14.80	15.75	15.75	16.70	16.70	17.65	
PARA-BELL	Plain Non-Skid Gray Tubes Red Tubes	13.80 14.50 2.95 3.30	14.20 14.90 3.05 3.35	18.05 18.75 3.35 3.70	17.45 18.15 3.45 3.80	21.30 22.00 3.75 4.10	20.70 21.40 3.85 4.20	24.55 25.25 4.15 4.50	23.95 24.65 4.25 4.60	27.80 28.50 4.55 4.90	27.20 27.90 4.65 5.00	31.05 31.75 4.95 5.30	30.45 31.15 5.05 5.40	34.30 35.00 5.35 5.70	33.70 34.40 5.45 5.80	37.55 38.25 5.75 6.10	36.95 37.65 5.85 6.20	40.80 41.50 6.15 6.50	40.20 40.90 6.25 6.60	44.05 44.75 6.55 6.90	43.45 44.15 6.65 7.00	47.30 48.00 6.95 7.30	46.70 47.40 7.05 7.40	50.55 51.25 7.35 7.70	
PEARCE	Morton Plain Non-Skid German Town Cord Plain Non-Skid Red Tubes	11.00 12.85 17.50 3.25	11.85 13.70 18.40 3.45	15.35 16.95 21.95 3.95	14.55 16.15 21.15 3.75	18.05 19.65 24.65 4.25	17.25 18.85 23.85 4.05	20.75 22.35 27.35 4.55	19.95 21.55 26.55 4.35	23.45 25.05 30.05 4.85	22.65 24.25 29.25 4.65	26.15 27.75 32.75 5.15	25.35 26.95 31.95 4.95	28.85 30.45 35.45 5.45	28.05 29.65 34.65 5.25	31.55 33.15 38.15 5.75	30.75 32.35 37.35 5.55	34.25 35.85 40.85 6.05	33.45 35.05 39.65 5.85	36.95 38.55 43.15 6.35	36.15 37.75 42.35 6.15	39.65 41.25 45.85 6.65	38.85 40.45 45.05 6.45	42.35 43.95 48.55 6.95	
PENNSYLVANIA	Bar O Circle Vacuum Cup Ebony Tread Ton-Tested Gray Tubes	14.10 18.85 17.00 3.10	14.80 19.55 17.60 3.20	18.35 23.10 21.00 3.50	17.55 22.30 20.20 3.30	21.05 25.80 23.70 3.85	20.25 25.00 22.90 3.65	23.75 28.50 26.40 4.15	22.95 27.70 25.60 3.95	26.45 31.20 29.10 4.45	25.65 30.40 28.30 4.25	29.15 33.90 31.80 4.55	28.35 33.10 30.90 4.35	31.85 36.60 34.50 4.85	31.05 35.80 33.50 4.65	34.55 39.30 37.00 5.15	33.75 38.50 36.20 4.95	37.25 42.00 39.70 5.45	36.45 41.20 38.90 5.25	39.95 44.70 42.40 5.75	39.15 43.90 41.40 5.55	42.65 47.40 44.90 6.05	41.85 46.60 44.10 5.85	45.35 50.10 47.40 6.35	
PERFECTION	Plain Non-Skid Gray Tubes Red Tubes	18.00 21.25 3.20 3.40	19.25 22.50 3.35 3.55	22.75 26.00 3.70 3.90	21.95 25.20 3.80 4.00	25.45 28.70 4.15 4.35	24.65 27.90 4.25 4.45	28.15 31.40 4.55 4.75	27.35 30.60 4.65 4.85	30.85 34.10 4.95 5.15	30.05 33.30 5.05 5.25	33.55 36.80 5.35 5.55	32.75 36.00 5.45 5.65	36.25 39.50 5.75 5.95	35.45 38.70 5.85 6.05	38.95 42.20 6.15 6.35	38.15 41.40 6.25 6.45	41.65 44.90 6.55 6.75	40.85 44.10 6.65 6.85	44.35 47.60 6.95 7.15	43.55 46.80 7.05 7.25	47.05 50.30 7.35 7.55	46.25 49.50 7.45 7.65	49.75 53.00 7.75 7.95	
PHARIS	Plain Non-Skid Red Tubes	14.40 16.35 3.85	15.25 17.20 4.00	18.75 20.70 4.15	17.95 19.90 4.05	21.45 23.40 4.40	20.65 22.60 4.30	24.15 26.10 4.65	23.35 25.30 4.55	26.85 28.80 4.90	26.05 28.00 4.80	29.55 31.50 5.15	28.75 30.70 5.05	32.25 34.20 5.40	31.45 33.40 5.30	34.95 36.90 5.65	34.15 36.10 5.55	37.65 39.60 5.90	36.85 38.80 6.00	40.35 42.30 6.35	39.55 41.50 6.25	43.05 45.00 6.60	42.25 44.20 6.50	45.75 47.70 6.85	
PORTAGE	Daisy Non-Skid Gray or Red Tubes Daisy or Ribbed Cord	qs17.80 3.50 3.80	qs19.20 3.60 3.90	qs25.20 4.00 4.30	qs24.00 3.90 4.20	qs30.00 4.30 4.60	qs28.80 4.20 4.50	qs34.80 4.60 4.90	qs33.60 4.50 4.80	qs39.60 5.00 5.30	qs38.40 4.90 5.20	qs44.40 5.40 5.70	qs43.20 5.30 5.60	qs49.20 5.80 6.10	qs48.00 5.70 6.00	qs54.00 6.20 6.50	qs52.80 6.10 6.40	qs58.80 6.60 6.90	qs57.60 6.50 6.80	qs63.60 7.00 7.30					

NOTE—The letter c means that a CLINCHER tire is NOT made in this size; q that a QUICK-DETACHABLE is not made in this size, and s that a STRAIGHT SIDE is not made in this size.

## TIRES AND TUBES—Continued

Name	Trade Name and Tread	28.3	30.3	32.3	30.3 1/2	31.3 1/2	32.3 1/2	34.3 1/2	31.4	32.4	33.4	34.4	35.4	36.4	32.4 1/2	33.4 1/2	34.4 1/2	35.4 1/2	36.4 1/2	37.4 1/2	35.5	36.5	37.5	37.5 1/2	38.5 1/2
QUAKER	Plain	a18.40	a19.45	a20.95	24.25	25.40	28.95	31.15	33.35	36.75	38.35	38.95	a40.70	41.30	q34.75	q35.75	q36.75	q37.75	q38.75	q39.75	q40.75	q41.75	q42.75	q43.75	q44.75
	T.T.T. Non-Skid	a20.70	a21.35	a22.35	28.20	29.30	33.45	36.35	38.55	42.10	44.55	45.45	a47.35	48.05	q34.75	q35.75	q36.75	q37.75	q38.75	q39.75	q40.75	q41.75	q42.75	q43.75	q44.75
	Gray Tubes	3.20	3.35	3.50	3.75	3.95	4.40	4.20	5.10	5.40	5.50	5.65	5.80	5.90	6.80	7.00	7.05	7.15	7.25	7.35	7.45	7.55	7.65	7.75	7.85
	Red Tubes	3.50	3.70	3.90	4.15	4.35	4.40	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
RACINE	Plain	q15.60	q16.70	q19.45	q20.55	q21.75	23.95	28.90	31.55	32.20	34.40	35.25	36.20	36.80	q34.55	q35.55	q36.55	q37.55	q38.55	q39.55	q40.55	q41.55	q42.55	q43.55	q44.55
	Country Road	q18.20	q19.55	q22.95	q23.70	q24.85	28.05	31.65	33.30	35.25	40.50	41.10	41.85	41.85	q34.55	q35.55	q36.55	q37.55	q38.55	q39.55	q40.55	q41.55	q42.55	q43.55	q44.55
	Ribbed Cord	q18.20	q19.55	q22.95	q23.70	q24.85	28.05	31.65	33.30	35.25	40.50	41.10	41.85	41.85	q34.55	q35.55	q36.55	q37.55	q38.55	q39.55	q40.55	q41.55	q42.55	q43.55	q44.55
	Non-Skid Cord	q18.20	q19.55	q22.95	q23.70	q24.85	28.05	31.65	33.30	35.25	40.50	41.10	41.85	41.85	q34.55	q35.55	q36.55	q37.55	q38.55	q39.55	q40.55	q41.55	q42.55	q43.55	q44.55
	Gray Tubes	3.15	3.30	3.60	3.85	3.95	4.15	4.30	4.50	4.50	5.50	5.70	5.95	6.05	6.80	7.00	7.10	7.20	7.30	7.40	7.50	7.60	7.70	7.80	7.90
	Red Tubes	3.75	4.05	4.35	4.45	4.75	4.85	5.05	5.05	5.20	6.55	6.70	6.90	7.15	7.90	8.20	8.25	8.45	8.60	8.85	9.05	9.25	9.45	9.65	9.85
RACINE HORSESHOE	Plain	q17.00	q18.50	q18.50	21.00	q22.00	24.00	25.00	q25.00	31.50	32.00	32.50	33.00	33.50	q34.00	q35.00	q36.00	q37.00	q38.00	q39.00	q40.00	q41.00	q42.00	q43.00	q44.00
	Non-Skid	q18.00	q19.50	q20.50	23.00	q23.50	27.00	29.00	q29.00	36.50	37.00	37.50	38.00	38.50	q34.00	q35.00	q36.00	q37.00	q38.00	q39.00	q40.00	q41.00	q42.00	q43.00	q44.00
	Cord Non-Skid	q18.00	q19.50	q20.50	23.00	q23.50	27.00	29.00	q29.00	36.50	37.00	37.50	38.00	38.50	q34.00	q35.00	q36.00	q37.00	q38.00	q39.00	q40.00	q41.00	q42.00	q43.00	q44.00
	Gray Tubes	3.15	3.20	3.75	3.80	4.00	4.20	4.60	4.60	5.20	5.35	5.55	5.75	5.90	6.90	7.00	7.15	7.35	7.55	7.75	7.95	8.15	8.35	8.55	8.75
	Red Tubes	3.95	3.95	4.75	4.90	4.75	5.00	5.00	5.20	6.25	6.40	6.65	6.80	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.25
RECORD	Non-Skid	q15.75	q16.75	q17.75	20.20	q21.20	23.20	25.20	q25.20	31.20	32.20	33.20	34.20	35.20	q34.20	q35.20	q36.20	q37.20	q38.20	q39.20	q40.20	q41.20	q42.20	q43.20	q44.20
	Red Tubes	3.55	3.75	4.20	4.60	4.65	4.80	5.10	5.10	5.35	5.50	5.70	5.70	6.00	7.00	7.15	7.35	7.55	7.75	7.95	8.15	8.35	8.55	8.75	8.95
	Gray Tubes	3.40	3.35	3.85	3.90	4.25	4.35	4.35	5.00	5.20	5.35	5.50	5.70	6.25	6.00	6.15	6.35	6.55	6.75	6.95	7.15	7.35	7.55	7.75	7.95
REPUBLIC	Plain	q15.55	q16.70	q17.75	21.25	q22.25	24.25	26.25	q26.25	32.25	33.25	34.25	35.25	36.25	q34.25	q35.25	q36.25	q37.25	q38.25	q39.25	q40.25	q41.25	q42.25	q43.25	q44.25
	Staggard Non-Skid	q18.25	q19.45	q20.75	24.80	q25.80	29.05	32.95	q32.95	39.50	40.50	41.50	42.50	43.50	q34.25	q35.25	q36.25	q37.25	q38.25	q39.25	q40.25	q41.25	q42.25	q43.25	q44.25
	Gray Tubes	3.20	3.25	3.50	3.80	3.95	4.10	4.55	5.55	5.75	5.90	6.25	6.35	6.45	7.20	7.40	7.50	7.65	7.85	8.05	8.25	8.45	8.65	8.85	9.05
	Blackline Red Tubes	3.70	3.90	4.25	4.55	4.80	4.85	5.10	5.10	6.25	6.55	6.80	7.05	7.15	7.90	8.05	8.35	8.45	8.70	8.95	9.05	9.30	9.50	9.70	9.90
REVERE	Plain	14.00	15.20	17.75	19.75	20.75	22.90	25.30	30.20	30.85	32.25	33.05	33.85	34.65	q34.65	q35.65	q36.65	q37.65	q38.65	q39.65	q40.65	q41.65	q42.65	q43.65	q44.65
	Anti-Skid	14.70	15.95	18.05	20.70	21.70	24.05	26.75	31.70	32.40	33.90	34.65	35.45	36.25	q34.65	q35.65	q36.65	q37.65	q38.65	q39.65	q40.65	q41.65	q42.65	q43.65	q44.65
	Granite Tread	18.05	19.05	21.05	23.50	24.50	27.00	30.00	35.00	35.75	37.25	38.00	38.75	39.50	q34.65	q35.65	q36.65	q37.65	q38.65	q39.65	q40.65	q41.65	q42.65	q43.65	q44.65
	Cord Castings	3.15	3.30	3.40	4.15	4.25	4.40	4.75	5.35	5.50	5.65	5.85	6.00	6.20	6.95	7.05	7.10	7.25	7.35	7.45	7.55	7.65	7.75	7.85	7.95
	Red Tubes	4.00	4.10	4.20	5.10	5.30	5.40	5.90	6.60	6.65	6.75	6.85	7.20	7.30	8.70	8.80	8.90	9.05	9.25	9.35	9.45	9.55	9.65	9.75	9.85
SAVAGE	Plain	q14.15	q15.35	q16.55	18.25	q19.25	21.35	24.20	q24.20	30.45	31.20	32.00	32.80	33.60	q33.60	q34.60	q35.60	q36.60	q37.60	q38.60	q39.60	q40.60	q41.60	q42.60	q43.60
	Non-Skid	q16.50	q17.80	q19.10	21.35	q22.35	24.95	28.35	q28.35	35.70	36.45	37.20	38.00	38.80	q33.60	q34.60	q35.60	q36.60	q37.60	q38.60	q39.60	q40.60	q41.60	q42.60	q43.60
	Granite Tubes	3.75	3.90	4.10	4.50	4.90	4.95	5.35	6.10	6.40	6.50	6.65	6.85	7.20	7.55	7.85	8.15	8.30	8.60	8.75	8.95	9.15	9.35	9.55	9.75
SCHAVOIR	Gray Tubes	3.35	3.40	3.65	4.10	4.15	4.20	4.40	5.20	5.30	5.50	5.65	5.85	6.00	6.65	6.75	6.85	6.95	7.05	7.15	7.25	7.35	7.45	7.55	7.65
	Red Tubes	3.40	3.65	3.95	4.60	4.65	4.70	4.90	5.80	5.90	6.05	6.25	6.50	6.70	7.25	7.45	7.65	7.85	8.05	8.20	8.40	8.60	8.80	9.00	9.20
SEMPEL	Plain	3.00	3.75	4.00	4.50	4.60	4.75	5.05	6.05	6.20	6.40	6.60	6.75	6.95	7.95	8.20	8.35	8.50	8.70	8.9	9.85	10.05	10.35	11.00	11.30
SOUTHERN	Plain	q12.80	q13.20	q13.60	17.00	q18.00	20.10	22.50	q22.50	28.70	29.40	30.10	30.80	31.50	q30.80	q31.80	q32.80	q33.80	q34.80	q35.80	q36.80	q37.80	q38.80	q39.80	q40.80
	S Non-Skid	q14.70	q15.10	q15.50	19.50	q20.50	22.60	25.00	q25.00	31.20	31.90	32.60	33.30	34.00	q31.90	q32.90	q33.90	q34.90	q35.90	q36.90	q37.90	q38.90	q39.90	q40.90	q41.90
	Red Tubes	3.45	3.70	3.90	4.25	4.35	4.40	4.60	5.85	6.00	6.20	6.30	6.45	6.65	7.55	7.65	7.75	7.85	7.95	8.05	8.15	8.25	8.35	8.45	8.55
SPEEDWAY	Non-Skid	q13.60	q14.00	q14.40	18.00	q19.00	21.10	23.50	q23.50	29.70	30.40	31.10	31.80	32.50	q31.80	q32.80	q33.80	q34.80	q35.80	q36.80	q37.80	q38.80	q39.80	q40.80	q41.80
	Red Tubes	4.33	4.48	4.63	5.66	6.00	6.33	6.66	7.33	7.66	8.00	8.33	8.66	9.00	9.66	9.99	10.32	10.65	10.98	11.31	11.64	11.97	12.30	12.63	12.96
STANDARD FOUR	Super Tread	15.50	16.15	16.80	20.55	22.50	24.30	26.15	32.00	32.60	33.20	33.80	34.40	35.00	q34.40	q35.40	q36.40	q37.40	q38.40	q39.40	q40.40	q41.40	q42.40	q43.40	q44.40
	Non-Skid	16.60	17.25	17.90	21.65	23.60	25.45	27.30	33.15	33.75	34.35	34.95	35.55	36.15	q35.55	q36.55	q37.55	q38.55	q39.55	q40.55	q41.55	q42.55	q43.55	q44.55	q45.55
	Gray Tubes	2.85	2.90	3.00	3.45	3.60	3.75	3.95	4.65	4.85	5.05	5.25	5.45	5.65	6.45	6.55	6.65	6.75	6.85	6.95	7.05	7.15	7.25	7.35	7.45
	Red Tubes	3.30	3.40	3.50	4.15	4.25	4.40	4.65	5.50	5.65	5.80	6.00	6.20	6.40	7.20	7.30	7.40	7.50	7.60	7.70	7.80	7.90	8.00	8.10	8.20
STAR	Ribbed Tread	q23.40	q24.00	q24.60	28.70	q29.30	31.80	34.30	q34.30	40.80	41.40	42.00	42.60	43.20	q42.60	q43.60	q44.60	q45.60	q46.60	q47.60	q48.60	q49.60	q50.60	q51.60	q52.60
	All Star Non-Skid	q24.00	q24.60	q25.20	29.40	q30.00	32.50	35.00	q35.00	41.50	42.10	42.70	43.30	43.90	q43.30	q44.30	q45.30	q46.30	q47.30	q48.30	q49.30	q50.30	q51.30	q52.30	q53.30
	Gray Tubes	3.60	3.80	4.00	4.25	4.45	4.45	4.65	5.95	6.15	6.35	6.55	6.75	6.95	7.75	7.85	7.95	8.05	8.15	8.25	8.35	8.45	8.55	8.65	8.75
STERLING	Sterling Vacuum-Bar Non-Skid	q18.33	q19.44	q20.55	23.00	q24.11	26.60	29.10	q29.10	35.60	36.20	36.80	37.40	38.00	q37.40	q38.40	q39.40	q40.40	q41.40	q42.40	q43.40	q44.40	q45.40	q46.40	q47.40
	Sterling Seamless Red Tubes	4.08	4.37	4.71	5.94	6.05	6.23	6.66	7.12	7.25	7.51	7.72	7.88	8.12	8.92	9.24									



Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	32x3½	34x3½	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37½x5	38x5½
THERMOID	Non-Skid and Ribbed Tread	qs24.70	qs24.85																					
	Brown and Deluxe Red Tubes	q3.80	q3.85																					
	6000 Mile Plain	17.95	18.00	23.00	22.85	24.05	23.90	34.00	33.50	32.50	33.00	33.50	34.00	33.50	32.50	33.00	33.50	34.00	33.50	32.50	33.00	33.50	34.00	33.50
	6000 Non-Skid	19.00	20.55	26.50	26.00	27.25	26.90	39.25	38.75	37.50	38.00	38.50	39.00	38.50	37.50	38.00	38.50	39.00	38.50	37.50	38.00	38.50	39.00	38.50
TOLIVER	4000 Mile Plain	17.45	17.50	23.00	22.85	24.05	23.90	34.00	33.50	32.50	33.00	33.50	34.00	33.50	32.50	33.00	33.50	34.00	33.50	32.50	33.00	33.50	34.00	33.50
	Non-Skid	17.45	17.50	23.00	22.85	24.05	23.90	34.00	33.50	32.50	33.00	33.50	34.00	33.50	32.50	33.00	33.50	34.00	33.50	32.50	33.00	33.50	34.00	33.50
	Gray Tubes	3.10	3.05	3.40	3.35	3.80	3.75	4.75	4.65	4.55	5.00	5.15	5.80	4.65	4.55	5.00	5.15	5.80	4.65	4.55	5.00	5.15	5.80	4.65
	Puncture-proof Inner Tubes	3.00	3.00	3.40	3.35	3.80	3.75	4.75	4.65	4.55	5.00	5.15	5.80	4.65	4.55	5.00	5.15	5.80	4.65	4.55	5.00	5.15	5.80	4.65
TYRIAN	Holdite Non-Skid	qs16.10	qs17.55	qs19.80	qs22.50	qs23.80	qs25.95	qs34.45	qs35.30	qs37.00	qs37.85	qs39.55	qs40.20	qs45.80	qs48.05	qs51.90	qs54.15	qs56.40	qs58.65	qs61.90	qs63.30	qs64.45	qs65.60	qs66.75
	Extra Heavy Red	qs17.55	qs19.80	qs22.50	qs25.95	qs28.20	qs31.70	qs37.50	qs38.35	qs40.10	qs40.95	qs42.65	qs43.25	qs48.80	qs51.90	qs54.15	qs56.40	qs58.65	qs61.90	qs63.30	qs64.45	qs65.60	qs66.75	qs67.90
	Holdite Non-Skid	qs17.55	qs19.80	qs22.50	qs25.95	qs28.20	qs31.70	qs37.50	qs38.35	qs40.10	qs40.95	qs42.65	qs43.25	qs48.80	qs51.90	qs54.15	qs56.40	qs58.65	qs61.90	qs63.30	qs64.45	qs65.60	qs66.75	qs67.90
	Extra Heavy Red	qs17.55	qs19.80	qs22.50	qs25.95	qs28.20	qs31.70	qs37.50	qs38.35	qs40.10	qs40.95	qs42.65	qs43.25	qs48.80	qs51.90	qs54.15	qs56.40	qs58.65	qs61.90	qs63.30	qs64.45	qs65.60	qs66.75	qs67.90
UNITED STATES	Plain	14.00	15.20	17.00	20.75	22.90	28.30	30.20	30.85	32.25	33.05	34.65	35.35	38.35	41.80	43.05	44.45	46.50	48.50	50.35	52.05	53.65	55.20	56.75
	Urethane Non-Skid	14.00	15.20	17.00	20.75	22.90	28.30	30.20	30.85	32.25	33.05	34.65	35.35	38.35	41.80	43.05	44.45	46.50	48.50	50.35	52.05	53.65	55.20	56.75
	Chain Non-Skid	14.00	15.20	17.00	20.75	22.90	28.30	30.20	30.85	32.25	33.05	34.65	35.35	38.35	41.80	43.05	44.45	46.50	48.50	50.35	52.05	53.65	55.20	56.75
	Nobby Non-Skid	14.00	15.20	17.00	20.75	22.90	28.30	30.20	30.85	32.25	33.05	34.65	35.35	38.35	41.80	43.05	44.45	46.50	48.50	50.35	52.05	53.65	55.20	56.75
VICTOR	Royal Cord Non-Skid	21.70	22.10	28.00	30.25	32.75	45.00	40.00	40.80	42.85	44.00	46.20	46.75	50.50	51.85	53.20	54.55	56.90	58.25	60.60	61.95	63.30	64.65	66.00
	Gray Tubes	3.15	3.30	3.45	4.25	4.40	4.75	5.35	5.50	5.65	5.75	6.00	6.20	6.15	6.35	6.55	6.70	6.85	7.00	7.15	7.30	7.45	7.60	7.75
	Red Tubes	4.00	4.10	4.40	5.30	5.45	5.65	6.70	6.80	6.95	7.05	7.20	7.30	7.70	7.85	8.00	8.15	8.30	8.45	8.60	8.75	8.90	9.05	9.20
	Springfield Red Tubes	4.00	4.10	4.40	5.30	5.45	5.65	6.70	6.80	6.95	7.05	7.20	7.30	7.70	7.85	8.00	8.15	8.30	8.45	8.60	8.75	8.90	9.05	9.20
VIKING	Plain	21.00	22.30	24.40	30.95	33.75	41.70	42.60	43.35	44.20	45.05	46.10	46.95	48.90	50.75	52.60	54.45	56.30	58.15	60.00	61.85	63.70	65.55	67.40
	Ribbed	21.00	22.30	24.40	30.95	33.75	41.70	42.60	43.35	44.20	45.05	46.10	46.95	48.90	50.75	52.60	54.45	56.30	58.15	60.00	61.85	63.70	65.55	67.40
	Non-Skid	21.00	22.30	24.40	30.95	33.75	41.70	42.60	43.35	44.20	45.05	46.10	46.95	48.90	50.75	52.60	54.45	56.30	58.15	60.00	61.85	63.70	65.55	67.40
	Victor Gray Tubes	3.40	3.60	4.20	4.55	4.70	5.70	5.85	5.95	6.05	6.15	6.25	6.35	6.45	6.55	6.65	6.75	6.85	6.95	7.05	7.15	7.25	7.35	7.45
VITALIC	Springfield Pure Gum Tubes	3.80	3.95	4.05	5.10	5.20	5.40	6.30	6.35	6.40	6.45	6.50	6.55	6.60	6.65	6.70	6.75	6.80	6.85	6.90	6.95	7.00	7.05	7.10
	Victor Red Tubes	3.80	3.95	4.05	5.10	5.20	5.40	6.30	6.35	6.40	6.45	6.50	6.55	6.60	6.65	6.70	6.75	6.80	6.85	6.90	6.95	7.00	7.05	7.10
	Springfield Red Tubes	4.00	4.10	4.40	5.30	5.45	5.65	6.70	6.80	6.95	7.05	7.20	7.30	7.70	7.85	8.00	8.15	8.30	8.45	8.60	8.75	8.90	9.05	9.20
	Hold-On Tread	21.00	22.30	24.40	30.95	33.75	41.70	42.60	43.35	44.20	45.05	46.10	46.95	48.90	50.75	52.60	54.45	56.30	58.15	60.00	61.85	63.70	65.55	67.40
VULCAN	Plain	21.00	22.30	24.40	30.95	33.75	41.70	42.60	43.35	44.20	45.05	46.10	46.95	48.90	50.75	52.60	54.45	56.30	58.15	60.00	61.85	63.70	65.55	67.40
	Non-Skid	21.00	22.30	24.40	30.95	33.75	41.70	42.60	43.35	44.20	45.05	46.10	46.95	48.90	50.75	52.60	54.45	56.30	58.15	60.00	61.85	63.70	65.55	67.40
	Red and Gray Tubes	4.15	4.25	4.40	5.25	5.35	5.45	6.35	6.40	6.45	6.50	6.55	6.60	6.65	6.70	6.75	6.80	6.85	6.90	6.95	7.00	7.05	7.10	7.15
	Extra Heavy Gray Tubes	4.70	4.80	5.05	5.65	5.75	5.85	6.75	6.80	6.85	6.90	6.95	7.00	7.05	7.10	7.15	7.20	7.25	7.30	7.35	7.40	7.45	7.50	7.55
WILSON	Indian Red Tubes	3.30	3.35	3.70	4.15	4.25	4.40	5.40	5.55	5.70	5.85	6.25	6.30	6.35	6.40	6.45	6.50	6.55	6.60	6.65	6.70	6.75	6.80	6.85
	Wearwell Plain	qs15.60	qs16.40	qs17.20	qs19.60	qs20.65	qs21.80	qs24.25	qs25.30	qs26.45	qs27.60	qs28.75	qs29.90	qs31.05	qs32.20	qs33.35	qs34.50	qs35.65	qs36.80	qs37.95	qs39.10	qs40.25	qs41.40	qs42.55
	Wearwell Non-Skid	qs15.60	qs16.40	qs17.20	qs19.60	qs20.65	qs21.80	qs24.25	qs25.30	qs26.45	qs27.60	qs28.75	qs29.90	qs31.05	qs32.20	qs33.35	qs34.50	qs35.65	qs36.80	qs37.95	qs39.10	qs40.25	qs41.40	qs42.55
	Wearwell Gray Tubes	3.80	3.85	4.20	4.60	4.75	4.80	5.80	5.85	5.90	5.95	6.00	6.05	6.10	6.15	6.20	6.25	6.30	6.35	6.40	6.45	6.50	6.55	6.60
WOODWORTH	Wearwell Red Tubes	3.80	3.85	4.20	4.60	4.75	4.80	5.80	5.85	5.90	5.95	6.00	6.05	6.10	6.15	6.20	6.25	6.30	6.35	6.40	6.45	6.50	6.55	6.60
	Wearwell Non-Skid	qs15.60	qs16.40	qs17.20	qs19.60	qs20.65	qs21.80	qs24.25	qs25.30	qs26.45	qs27.60	qs28.75	qs29.90	qs31.05	qs32.20	qs33.35	qs34.50	qs35.65	qs36.80	qs37.95	qs39.10	qs40.25	qs41.40	qs42.55
	Wearwell Gray Tubes	3.80	3.85	4.20	4.60	4.75	4.80	5.80	5.85	5.90	5.95	6.00	6.05	6.10	6.15	6.20	6.25	6.30	6.35	6.40	6.45	6.50	6.55	6.60
	Wearwell Red Tubes	3.80	3.85	4.20	4.60	4.75	4.80	5.80	5.85	5.90	5.95	6.00	6.05	6.10	6.15	6.20	6.25	6.30	6.35	6.40	6.45	6.50	6.55	6.60
ZEE-ZEE	Wearwell Non-Skid	qs15.60	qs16.40	qs17.20	qs19.60	qs20.65	qs21.80	qs24.25	qs25.30	qs26.45	qs27.60	qs28.75	qs29.90	qs31.05	qs32.20	qs33.35	qs34.50	qs35.65	qs36.80	qs37.95	qs39.10	qs40.25	qs41.40	qs42.55
	Wearwell Gray Tubes	3.80	3.85	4.20	4.60	4.75	4.80	5.80	5.85	5.90	5.95	6.00	6.05	6.10	6.15	6.20	6.25	6.30	6.35	6.40	6.45	6.50	6.55	6.60
	Wearwell Red Tubes	3.80	3.85	4.20	4.60	4.75	4.80	5.80	5.85	5.90	5.95	6.00	6.05	6.10	6.15	6.20	6.25	6.30	6.35	6.40	6.45	6.50	6.55	6.60
	Wearwell Non-Skid	qs15.60	qs16.40	qs17.20	qs19.60	qs20.65	qs21.80	qs24.25	qs25.30	qs26.45	qs27.60	qs28.75	qs29.90	qs31.05	qs32.20	qs33.35	qs34.50	qs35.65	qs36.80	qs37.95	qs39.10	qs40.25	qs41.40	qs42.55

NOTE—The letter c means that a CLINCHER tire is NOT made in this size; q that a QUICK-DETACHABLE is not made in this size, and s that a STRAIGHT SIDE is not made in this size.

These Tables are for your constant consultation and should be of great value in the conduct of your business—

SAVE THEM

# Trucks

# MOTOR WORLD GUIDE

*This table appears in the first issue every month. It is corrected every month and brought up to date.*

Name and Model	TIRES			MOTOR										TRANSMISSION										BRAKES				
	Wheelbase in Inches			Kind	S. A. E. H. P.	Cylinders Bore and Stroke	IGNITION		Electric System—Type and Make	GOVERNOR		SPEED	FUEL SYS.		CLUTCH		GEARSET			Rear Axle	Springs, Make	Universal, Make	Final Drive	Propulsion Taken By	Torque Taken By	Hand Brake	Foot Brake	Steering Gear
	Price of Chassis	Front	Rear				Type	Make		Type	Make		Drive	Make	Type	Make	Type	Make	Type									
A & B	3	\$4500	144	48x34	42 8	21	2	4-5 1/2	G-E	None	1200	Scbrl.	none	own	28 0	own	Perf.	Frank	int-g.	rad-rad	int-g.	rad-rad	int-g.	rad-rad	ext-f-w.	Genr.		
A & B	3	\$4500	144	48x34	42 8	21	2	4-5 1/2	G-E	None	1200	Scbrl.	none	own	28 0	own	Perf.	Frank	int-g.	rad-rad	int-g.	rad-rad	int-g.	rad-rad	ext-f-w.	Genr.		
A & B	3	\$4500	144	48x34	42 8	21	2	4-5 1/2	G-E	None	1200	Scbrl.	none	own	28 0	own	Perf.	Frank	int-g.	rad-rad	int-g.	rad-rad	int-g.	rad-rad	ext-f-w.	Genr.		
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.	int-w.	Ross			
Acason	1	\$2500	150	36x5	22 2	21	2	4-5 1/2	Esmnn.	Wauk.	1500	Stumg.	dp	Covert	3 9 2	Timkn	Dirt.	Spicer	worm	spgrs.	spgrs.	spgrs.	spgrs.					



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## PASSENGER CARS—Continued

MAKE AND MODEL	Price	No. of Cylinders	Bore and Stroke, Inches	S.A.E. H.P.	Piston Displacement Cubic Inches	High Gear Ratio	Make of Engine	Cylinder Shape	Camshaft Drive	Water Circulation	LUBRICATION		ELECTRIC SYSTEM		IGNITION		CARBURETION		TRANSMISSION			RUNNING GEAR				BEARINGS											
											System	Type of Pump	Make	Voltage	Make	Plug	Make of Carburetor	Fuel Feed	Clutch Type	Location	Forward	Speeds	Make	Final Drive	Car Drives	Rear Axle Type	Make of Rear Axle	Torque Taken By	Wheelbase	Tire	Rims	Wheels	Rear Springs	Make of Speedometer	Number Crankshaft Bearings	Gearset	Rear Axle
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.	RR	B.
34-B Oakland	\$1050	6	2 1/4 x 3 1/2	19.0	177.0	4.50-1	North	1	H	P	P	G	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Sp. B.	Sp. B.	Sp. B.	112	32x4	SS	SS	Wd. S-E.	Stewart	3 B.P.		



## MOTOR WORLD GUIDE

Lamp  
BulbsLamp  
Bulbs

Car and Model	HEAD LAMPS	SIDE LAMPS	TAIL LAMP	DASH LAMP	Fuses Amp.	Wiring System	Type of Dimmer	Remarks	Car and Model	HEAD LAMPS	SIDE LAMPS	TAIL LAMP	DASH LAMP	Fuses Amp.	Wiring System	Type of Dimmer	Remarks	
Abbott-Detroit	6-8 15	6-8 4H	6-8 2	6-8 2	15	E.S.	D. Bulb.	Dash lamp Edison D.	Lexington	6R	30	6	6	4	15	E.S.	D. Bulb.	Dash lamp Edison D.
Allen	6-8 18	6-8 4	6-8 2	6-8 2	20	E.S.	Warner lens.	Dash lamp double.	Liberty	10B	7	6	6	2	5	E.S.	Hdamps.	Spotlight, 7 v., 21 cp., double contact.
American	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	Dash lamp double.	Locomobile		6-8 21	6-8 6	6-8 4	6-8 4	10	E.S.	Resist.	Tonneau & Stoplights 6-8 v., 2 cp.
Apperson	6-8 15	6-8 4	6-8 2	6-8 2	25	E.D.	Resist.	Dash lamp Edison D.	McFarlan	X	6-8 24	6-8 12H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Edison D.
Auburn 39 B.	6-8 18	6-8 4	6-8 2	6-8 2	25	E.S.	Resist.	Dash lamp Edison D.	Madison		6-8 15	6-8 6H	6-8 4	6-8 4	5	E.S.	Series.	Dash lamp Edison D.
Auburn 44.	6-8 18	6-8 4H	6-8 4	6-8 4	2	E.S.	Resist.	Dash lamp Edison D.	Matthias A.		12 18	12 4	6	2	None	E.S.	Resist.	Dash lamp Edison D.
Austin	6-8 24	6-8 4H	6-8 4	6-8 4	2	E.S.	Resist.	Dash lamp Edison D.	Marmon	34	6-8 24	6-8 8H	6-8 4	6-8 4	20	E.S.	Warner lens.	
Bell	6-8 18	6-8 4H	6-8 2	6-8 2	15	E.S.	Resist.	Dash lamp Edison D.	Maxwell	25	12-16 24	12-16 12	12-16 2	12-16 2	20	E.S.	Resist.	
Biddle	6-8 21	6-8 4H	6-8 2	6-8 2	10	E.S.	Resist.	Dash lamp Edison D.	Mercer	Ser. 4	6-8 21	6-8 4	6-8 4	6-8 4	10	E.S.	D. Bulb.	
Brewster	6-8 21	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	Metz	25	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.D.	Shad. rays.	
Briscoe	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	Mitchell	D-40	6-8 15	6-8 6H	6-8 2	6-8 2	20	E.D.	Deflect.	
Bour Davis	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	Moline-Knight		6-8 15	6-8 2H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Buick	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	Monroe		6-8 15	6-8 2H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Cadillac	6-8 18	6-8 4H	6-8 2	6-8 2	20	E.S.	Hdamps	Dash lamp Edison D.	Murray	70T	6-8 18	6-8 4H	6-8 2	6-8 2	15	E.D.	Warner lens.	
Case	6-8 18	6-8 4H	6-8 2	6-8 2	20	E.S.	Hdamps	Dash lamp Edison D.	Nash		6-8 18	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Chalmers	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	National		6-8 18	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Chandler	6-8 18	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	Nelson		12-16 30	12-16 6H	12-16 3	12-16 3	5-30	E.D.	Warner lens.	
Chevrolet	6-8 12	6-8 4H	6-8 2	6-8 2	20	E.D.	Resist.	Dash lamp Edison D.	Oakland 31-B.		6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	
Chevrolet	6-8 12	6-8 4H	6-8 2	6-8 2	20	E.D.	Resist.	Dash lamp Edison D.	Oldsmobile	37	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	
Chevrolet	6-8 12	6-8 4H	6-8 2	6-8 2	20	E.D.	Resist.	Dash lamp Edison D.	Olympian		6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	
Cole	6-8 21	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	Overland		6-8 16	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	
Columbia	6-8 12	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	Owen	Q-36	28 21	14 4H	14 2	14 2	10	E.D.	Warner lens.	
Commonwealth	6-8 12	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	W-42		28 21	14 4H	14 2	14 2	10	E.D.	Warner lens.	
Crawford	6-8 12	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	Packard		6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Crow-Elkhart	6-8 13	6-8 4H	6-8 2	6-8 2	15	E.D.	Resist.	Dash lamp Edison D.	Pan-American		6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Cunningham	6-8 13	6-8 4H	6-8 2	6-8 2	15	E.D.	Resist.	Dash lamp Edison D.	Pearless	56	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Daniels	6-8 18	6-8 4H	6-8 2	6-8 2	15	E.S.	Warner lens.	Cowl lamp Candel.	Pilot	6-45	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Davis	6-8 15	6-8 4H	6-8 2	6-8 2	15	E.S.	Warner lens.	Dash lamp Edison D.	Premier	6-C	6-8 21	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Dixie Flyer	6-8 15	6-8 4H	6-8 2	6-8 2	15	E.S.	Warner lens.	Dash lamp Edison D.	Regal	J	6-8 21	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Dodge	6-8 15	6-8 4H	6-8 2	6-8 2	15	E.S.	Resist.	Dash lamp Edison D.	Reo	M	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Dodge Brothers	6-8 15	6-8 4H	6-8 2	6-8 2	15	E.S.	Resist.	Dash lamp Edison D.	Reo	T	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Dodge Brothers	6-8 15	6-8 4H	6-8 2	6-8 2	15	E.S.	Resist.	Dash lamp Edison D.	Saxon		6-8 12	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Dorris	6-8 15	6-8 4H	6-8 2	6-8 2	15	E.S.	Resist.	Dash lamp Edison D.	Scotch-Booth		6-8 12	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Dort	6-8 15	6-8 4H	6-8 2	6-8 2	15	E.S.	Resist.	Dash lamp Edison D.	Simplex	V	12-16 40	12-16 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Elgin	6-8 21	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	Singer	17	6-8 32	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Elcar	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	Standard	G	6-8 18	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Empire	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	Stanley Steamer		6-8 18	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Fiat	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	Stearns SK8		12-16 24	12-16 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Ford	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	SKL-4		12-16 18	12-16 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Franklin	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	Stephens		6-8 21	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
F.R.P.	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	Sudebaker		6-8 21	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Glide	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	SH, EH, EG		6-8 12	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Grant	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	Stutz	S	6-8 18	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Halladay	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	Templar		6-8 18	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Halladay	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	Vellie	38-39	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Harron	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	Westcott	S-18	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Haynes	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	White		12-16 25	12-16 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Holier	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	Willys-Knight		6-8 16	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Hudson	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	Winton	33-48	6-8 16	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Hupmobile	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.	Woods	54	6-8 16	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Inter-State	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.			6-8 16	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Jackson	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.			6-8 16	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Jones	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.			6-8 16	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Jordan	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.			6-8 16	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
King	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.			6-8 16	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Kissel	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.			6-8 16	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	
Kline	6-8 15	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Edison D.			6-8 16	6-8 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	

ABBREVIATIONS:—C.B.—Circuit Breaker. Candel.—Candelabra. D.—Double wiring system. E.D.—Edison double contact. E.S.—Edison single contact. H.—Small bulbs in headlamps for city driving. Resist.—Resistance. S.—Single wiring system. Series.—Series connection.

# Tires and Tubes

Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½		
CME	Plain	17.60	18.90		25.30	s26.30	26.80		s85.10	38.50	37.70	39.00					53.10	54.60	56.30		63.50	65.50	67.50				
	Kam Tread	s19.70	s26.60		s26.60	s27.60	28.20		s86.90	38.50	39.70	41.10				qc63.90	55.80	57.30	59.10	60.80		68.90	70.70				
	Dimple	20.20	21.60		29.00	s30.10	30.80		s40.40	42.10	43.60	45.00					61.00	62.80	64.70		72.90	75.40	77.60				
	Gray and Red Tubes	s22.20	s23.70	4.55	31.90	.....	33.90	36.00	6.45	s44.60	qc46.30	48.00	49.40	51.00	52.90	8.95	9.15	qc67.10	69.10	71.20	73.20	s80.30	82.70	85.40			
ADVANCE	Plain	s14.00	s14.75		s19.20	s20.20	22.45	s26.20	s29.40	30.00	31.40	32.05	33.15	34.15		s41.85	43.15	45.20	45.90	47.80		s51.60	s54.60				
	Non-Shld	s14.70	s15.50		s20.10	s21.25	23.55	s27.45	s30.80	31.45	32.85	33.70	34.65	35.85		s43.95	45.45	47.40	48.30	50.15		s54.10	s57.35				
	Plain	s15.05	s15.90	20.65	20.45	21.45	24.80	29.65	33.30	33.90	35.30	35.90	37.50	38.00		50.70	51.90	53.55	55.50	57.40	59.00	57.70	59.90				
	Gray Tubes	s16.20	s17.10		s23.50	24.45	27.85	32.65	36.90	37.50	38.95	39.55	41.15	41.65		52.65	53.25	55.85	56.30	57.25	59.30	62.55	64.75	86.20			
JAX	Plain	16.85	17.70		21.95	23.05	26.70		35.75	36.40	38.00	38.60	40.30	40.80		53.25	53.85	56.30	57.25	59.30	67.25	67.55	69.60				
	Non-Shld	16.20	17.10		21.95	23.05	26.70		35.75	36.40	38.00	38.60	40.30	40.80		53.25	53.85	56.30	57.25	59.30	67.25	67.55	69.60				
	Gray Tubes	3.55	3.30	3.75	4.15	4.25	4.40	4.75	5.35	5.55	5.80	5.90	6.05	6.25	7.15	7.00	7.15	7.25	7.55	7.70	9.35	9.45	10.10	10.30			
	Red Tubes	3.85	4.15	4.40	5.05	5.25	5.40	5.65	6.50	6.65	6.90	7.00	7.15	7.40	8.35	8.60	8.85	9.15	9.35	9.65	11.00	11.00	11.15	11.95	12.15		
AMAZON	Ribbed	qs18.55	qs18.55		qs24.00		qs27.70		qs37.45		qs40.05	e40.75				qs45.25	e56.75	e59.75	e60.50	qs63.35	e71.35						
	Non-Shld	qs18.50	qs19.55		qs25.25		qs29.10		qs38.35	qs39.40	42.15	e42.90				qs55.50	e57.15	e58.20	e60.50	qs63.35	e71.35						
	Red and Gray Tubes	3.45	3.85		4.50		4.70	4.95	6.25	6.50	6.75	6.85	7.05	7.15		7.90	8.05	8.20	8.40	8.75	9.40	9.90	10.00	10.15	11.55		
	Plain	17.60	18.50		22.50	24.30	28.25	35.55	36.30	38.15	39.00						53.25	55.65	56.50	59.00	65.35	66.35	69.25				
AMERICAN	Ribbed or Plain	18.50	19.50		23.50	25.30	29.25	36.65	37.40	39.25	40.10					6.90	7.05	7.25	7.50	7.75	8.80	8.95	9.10	10.40	10.65		
	Triple A Non-Shld	3.35	3.45		4.20	4.30	4.45	5.35	5.																		



Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
BRAENDER	Plain	s15.35	s15.75		20.20	s21.40	23.45	26.45	31.00	31.75	33.15	34.00	35.70	36.20	42.75	44.05	45.50	47.55	48.35	50.15	55.75	56.70	59.00	s61.25	s66.50
	Non-Skid	s17.80	s18.40		23.45	s24.75	27.15	31.00	36.20	37.00	38.90	39.75	41.70	42.35	50.00	51.50	53.25	55.65	56.50	58.70	65.10	66.35	69.10	s105.80	s111.90
	Gray Tubes	4.30	4.35		4.15	4.25	4.40	5.20	5.40	5.65	5.70	5.85	6.25	6.30	7.25	7.25	7.30	7.45	7.60	7.85	8.90	9.10	9.25	10.55	10.75
	Red Tubes	4.20	4.35		4.95	5.10	5.45	5.90	7.05	7.45	7.55	7.65	7.80	7.90	9.00	9.25	9.30	9.70	9.85	10.20	11.55	11.85	12.05	12.75	13.05
BRUNSWICK	Plain	q14.65	q15.80		q20.05	q21.55	23.50	c26.60	q31.30	c31.95	c33.50	c34.30	c35.85	c35.40	q42.75	c44.05	c45.50	c47.65	c48.35	c50.40	c55.80	c56.70	c59.20		
	Skid-Not	q17.15	q18.50		q23.50	q25.30	c27.45	c31.20	q36.65	q37.40	c39.20	c40.10	c41.90	c42.55	q48.60	c51.60	c53.25	c55.50	c56.50	c59.00	c63.50	c66.35	c69.25		
	Ribbed Tread	3.30	3.35		3.90	4.00	4.20	4.60	5.20	5.55	5.80	5.90	6.00	6.15	7.15	7.30	7.40	7.50	7.65	7.85	8.95	9.15	9.30		
	Gray Tubes	3.75	3.85		4.40	4.70	4.85	5.60	6.40	6.60	6.85	6.85	7.00	7.30	8.00	8.15	8.30	8.55	8.80	9.15	9.65	9.85	10.00		
BULL	Plain	q15.50	q16.10		q20.55	q22.45	24.25	c27.35	q31.35	q31.90	c33.75	c34.25	c35.60	c35.20	q42.35	c44.05	c45.95	c48.65	c49.45	c52.00	c57.25	c58.20	c60.35		
	Non-Skid	q17.40	q18.05		q22.95	q24.55	27.15	31.00	q36.05	q36.65	c38.15	c38.80	c40.85	c40.50	q48.60	c51.60	c53.25	c55.50	c56.50	c59.00	c63.50	c66.35	c69.25		
	Gray Tubes	3.30	3.40		3.80	4.15	4.25	4.40	4.65	5.00	5.65	5.90	6.15	6.30	7.30	7.45	7.50	7.70	7.85	8.30	8.65	8.85	9.00		
	Red Tubes	2.85	2.90		3.35	3.45	3.60	3.75	4.10	4.70	4.85	5.05	5.15	5.45	6.50	6.60	6.70	6.95	7.05	7.35	7.95	8.15	8.25		
CAPITOL	Plain	q15.30	q15.00		q19.70	q20.45	22.90	26.55	q29.85	c30.75	c32.05	c32.65	c37.05	c37.40	q42.75	c44.05	c45.50	c47.65	c48.35	c50.40	c55.80	c56.70	c59.20		
	Non-Skid	q16.35	q15.75		q20.20	q21.65	23.90	28.40	q31.35	c32.10	c33.45	c34.35	c38.90	c38.50	q48.60	c51.60	c53.25	c55.50	c56.50	c59.00	c63.50	c66.35	c69.25		
	Redman Tubes	3.85	3.75		4.60	4.65	4.80	5.10	6.05	6.15	6.45	6.70	6.85	7.00	7.80	7.85	8.05	8.15	8.25	8.50	9.00	10.10	9.90		
	Paragon Gray Tubes	3.40	3.35		3.90	4.25	4.35	5.00	5.20	5.35	5.50	5.70	6.25	6.00	7.15	7.15	7.30	7.20	7.35	7.70	8.80	9.35	9.00		
CARLISLE	Lighting Tread				q42.35		q42.35		q43.65	q45.30	q45.30	q46.65			c60.50	c62.15	c63.80	c65.20	c66.85		c79.20			c83.05	c8100.65
	Non-Skid	21.00	22.15	3.90	4.75		5.00		42.00	44.60	46.00	46.50			9.00	9.20	9.30	9.50	9.65		11.10			11.60	12.90
	Gray Tubes	15.20	15.60	19.00	20.30	21.40	23.65	30.70	31.10	31.70	33.15	33.90	40.90	36.10	46.55	47.55	48.60	49.40	50.50	50.50	54.50	63.65	67.80		
	Red Tubes	15.95	16.40	3.30	21.25	22.40	24.70	32.15	32.65	33.20	34.50	35.65	42.90	37.95	46.55	46.55	48.00	50.20	51.10	53.10	57.25	66.80	60.70		
CENTURY-PLAINFIELD	Plain	21.00	22.15	3.90	4.75		5.00		42.00	44.60	46.00	46.50			9.00	9.20	9.30	9.50	9.65		c79.20			c83.05	c8100.65
	Non-Skid	21.00	22.15	3.90	4.75		5.00		42.00	44.60	46.00	46.50			9.00	9.20	9.30	9.50	9.65		11.10			11.60	12.90
	Gray Tubes	15.20	15.60	19.00	20.30	21.40	23.65	30.70	31.10	31.70	33.15	33.90	40.90	36.10	46.55	47.55	48.60	49.40	50.50	50.50	54.50	63.65	67.80		
	Red Tubes	15.95	16.40	3.30	21.25	22.40	24.70	32.15	32.65	33.20	34.50	35.65	42.90	37.95	46.55	46.55	48.00	50.20	51.10	53.10	57.25	66.80	60.70		
CHAMPION	Plain	21.00	22.15	3.90	4.75		5.00		42.00	44.60	46.00	46.50			9.00	9.20	9.30	9.50	9.65		c79.20			c83.05	c8100.65
	Non-Skid	21.00	22.15	3.90	4.75		5.00		42.00	44.60	46.00	46.50			9.00	9.20	9.30	9.50	9.65		11.10			11.60	12.90
	Gray Tubes	15.20	15.60	19.00	20.30	21.40	23.65	30.70	31.10	31.70	33.15	33.90	40.90	36.10	46.55	47.55	48.60	49.40	50.50	50.50	54.50	63.65	67.80		
	Red Tubes	15.95	16.40	3.30	21.25	22.40	24.70	32.15	32.65	33.20	34.50	35.65	42.90	37.95	46.55	46.55	48.00	50.20	51.10	53.10	57.25	66.80	60.70		
CHESTER	Plain	s15.50	s16.10	s20.55	s22.95	s24.55	27.15	31.00	31.35	31.90	33.75	34.25	s35.60	s35.20	q42.35	c44.05	c45.95	c48.65	c49.45	c52.00	c57.25	c58.20	c60.35		
	Non-Skid	s17.40	s18.05	s22.95	s24.55	s26.15	28.40	32.90	33.45	34.00	35.85	36.35	s37.80	s37.40	q48.60	c51.60	c53.25	c55.50	c56.50	c59.00	c63.50	c66.35	c69.25		
	Gray Tubes	3.40	3.45	3.80	4.15	4.25	4.40	4.65	5.00	5.65	5.90	6.15	6.30	6.60	7.30	7.45	7.50	7.70	7.85	8.30	8.65	8.85	9.00		
	Red Tubes	2.85	2.90	3.35	3.75	3.85	4.00	4.25	4.70	4.85	5.05	5.15	5.45	5.65	6.50	6.70	6.95	7.30	7.35	7.55	7.95	8.15	8.25		
CLEVELAND-STANDARD	Plain	22.80	24.00	4.75	5.05	5.10	5.30	5.60	6.50	6.65	6.95	7.10	7.60	7.70	8.70	8.75	8.85	9.05	9.20	9.50	10.70	11.10	11.15	12.75	13.05
	Non-Skid	24.25	25.40	5.00	5.30	5.35	5.55	5.85	6.75	6.90	7.20	7.35	7.85	7.95	8.85	8.90	9.10	9.30	9.60	10.80	11.20	11.25	12.85	13.15	
	Gray Tubes	3.00	3.05	3.40	3.75	3.80	4.00	4.25	4.50	4.85	5.00	5.15	5.45	5.65	6.50	6.65	6.75	6.95	7.25	7.55	8.00	8.45	8.90	9.35	
	Red Tubes	3.75	3.80	4.15	4.50	4.55	4.75	5.00	5.25	5.55	5.85	6.10	6.35	6.65	7.50	7.65	7.75	7.95	8.25	8.55	9.00	9.45	9.85	10.30	
COLUMBIA	Plain	15.20	15.60	19.00	20.30	21.40	23.65	30.70	31.10	31.70	33.15	33.90	40.90	36.10	46.55	47.55	48.60	49.40	50.50	50.50	54.50	63.65	67.80		
	Non-Skid	15.95	16.40	3.30	21.25	22.40	24.70	32.15	32.65	33.20	34.50	35.65	42.90	37.95	46.55	46.55	48.00	50.20	51.10	53.10	57.25	66.80	60.70		
	Gray Tubes	3.25	3.30	3.75	4.15	4.20	4.35	5.00	5.25	5.35	5.55	5.65	6.35	6.05	7.30	7.45	7.50	7.70	7.85	8.30	8.65	8.85	9.00		
	Red Tubes	3.65	3.70	4.20	4.60	4.70	4.85	5.55	5.85	5.95	6.10	6.25	6.45	6.90	7.80	7.85	7.95	8.10	8.30	8.65	9.00	9.45	9.85	10.30	
CONVERSE	Rough Tread	q21.20	q22.40	3.75	4.05	4.10	4.35	4.65	5.55	5.65	5.85	6.15	6.45	7.25	7.45	7.65	7.75	7.95	8.05	8.30	8.65	8.85	9.00		
	Smooth Tread	q21.20	q22.40	3.75	4.05	4.10	4.35	4.65	5.55	5.65	5.85	6.15	6.45	7.25	7.45	7.65	7.75	7.95	8.05	8.30	8.65	8.85	9.00		
	Gray Tubes	3.30	3.35	3.70	4.05	4.10	4.35	4.65	5.55	5.65	5.85	6.15	6.45	7.25	7.45	7.65	7.75	7.95	8.05	8.30	8.65	8.85	9.00		
	Red Tubes	3.75	3.80	4.15	4.50	4.55	4.75	5.00	5.25	5.35	5.55	5.65	6.35	6.05	7.30	7.45	7.50	7.70	7.85	8.10	8.40	8.90	9.35	10.45	
CORTLAND	C. C. Plain	s15.50	s16.10	s20.55	s22.95	s24.55	27.15	31.00	31.35	31.90	33.75	34.25	s35.60	s35.20	q42.35	c44.05	c45.95	c48.65	c49.45	c52.00	c57.25	c58.20	c60.35		
	C. C. Non-Skid	s17.40	s18.05	s22.95	s24.55	s26.15	28.40	32.90	33.45	34.00	35.85	36.35	s37.80	s37.40	q48.60	c51.60	c53.25	c55.50	c56.50	c59.00	c63.50	c66.35	c69.25		
	Yankee Plain	s16.35	s16.95	s21.40	s22.95	s24.55	27.15	31.00	31.35	31.90	33.75	34.25	s35.60	s35.20	q42.35	c44.05	c45.95	c48.65	c49.45	c52.00	c57.25	c58.20	c60.35		
	Yankee Non-Skid	s18.35	s18.95	s23.40	s24.95	s26.55	29.15	33.00	33.35	33.90	35.75	36.25	s37.60	s37.20	q48.60	c51.60	c53.25	c55.50	c56.50	c59.00	c63.50	c66.35	c69.25		
CUPPLES	Rough Tread	q22.75	q23.95	4.05	4.35	4.40	4.65	4.95	5.85	5.95	6.15	6.45	6.75	7.55	7.65	7.85	7.95	8.15	8.40	8.70	9.00	9.30	9.60		
	Smooth Tread	q22.75	q23.95	4.05	4.35	4.40	4.65	4.95	5.85	5.95	6.15	6.45	6.75	7.55	7.65	7.85	7.95	8.15	8.40	8.70	9.00	9.30	9.60		
	Gray Tubes	3.80	3.85	4.20	4.55	4.60	4.85	5.15	5.45	5.55	5.75	5.85	6.55	6.25	7.50	7.65	7.75	7.95	8.25	8.55	8.85	9.15	9.45		
	Red Tubes	4.05	4.10	4.45	4.80	4.85	5.10	5.40	5.70	5.80	6.00	6.10	6.80	6.50	7.75	7.90	8.00	8.20	8.50	8.80	9.10	9.40	9.70		
CURTIS	Rhinoc Inner Tubes	8.00	8.90	10.70	11.30	11.80	12.30	12.80	14.00	14.50	15.40	15.40	16.30	16.30	18.00	18.50	18.50	18.90	19.40	19.40	20.5				

**NOTE**—The letter *c* means that a CLINCHER tire is NOT made in this size; *q* that a QUICK-DETACHABLE is not made in this size, and *s* that a STRAIGHT SIDE is not made in this size.

## TIRES AND TUBES—Continued

Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
DELON	Plain	17.75	12.80	15.50	25.10	26.60	29.10	29.10	34.30	36.45	39.00	41.20	42.20	44.40	51.60	52.80	55.80	56.50	57.10	58.80	65.90	67.30	69.15	89.05	92.20
	Non-Skid Red Tubes	19.55	21.80	16.35	28.60	29.25	32.00	32.00	37.75	40.10	42.90	45.30	46.40	48.85	56.75	58.10	61.40	62.15	62.80	64.70	72.50	74.05	76.05	98.00	101.40
DIAMOND	Smooth	3.85	3.95	3.50	4.55	4.90	5.00	5.00	6.15	6.35	6.70	6.85	7.05	7.25	8.15	8.25	8.35	8.50	8.80	8.95	9.90	10.20	10.40	11.35	11.50
	Squeegies Gray Tubes	15.50	15.50	16.35	20.20	21.25	23.60	23.60	30.95	31.55	33.05	33.75	38.55	39.60	42.85	44.05	45.45	47.60	48.35	55.35	54.30	61.50	57.50	77.95	81.55
DOUBLE FABRIC	Ribbed Type Xtra-Ply Duo Cord Non-Skid Gray Tubes	3.85	3.85	3.50	4.55	4.90	5.00	5.00	6.15	6.35	6.70	6.85	7.05	7.25	8.15	8.25	8.35	8.50	8.80	9.90	10.20	11.00	10.35	12.15	12.15
	Super-Dreadnaught Red Tubes	18.00	15.50	16.35	20.20	21.25	23.60	23.60	30.95	31.55	33.05	33.75	38.55	39.60	42.85	44.05	45.45	47.60	48.35	55.35	54.30	61.50	57.50	77.95	81.55
DREADNAUGHT	Vacuum Red Tubes	3.45	3.70	3.50	4.20	4.25	4.45	4.45	5.65	5.96	6.00	6.10	6.50	6.50	7.15	7.15	7.25	7.35	7.55	8.10	8.95	9.40	10.30	11.30	11.30
	Ribbed Red Tubes	20.70	18.50	23.50	28.50	29.50	32.50	32.50	38.55	38.85	40.80	42.50	46.00	46.00	51.60	52.80	55.80	56.50	57.10	58.80	65.90	67.30	69.15	89.05	92.20
DRY CLIMATE	Plain Red Tubes	3.35	3.35	3.50	4.55	4.90	5.00	5.00	6.15	6.35	6.70	6.85	7.05	7.25	8.15	8.25	8.35	8.50	8.80	9.90	10.20	11.00	10.35	12.15	12.15
	Gray Tubes	3.25	3.25	3.50	4.55	4.90	5.00	5.00	6.15	6.35	6.70	6.85	7.05	7.25	8.15	8.25	8.35	8.50	8.80	9.90	10.20	11.00	10.35	12.15	12.15
DUNLOP	Cross Groove Traction Non-Skid Tubes	27.95	27.95	32.65	32.65	33.90	36.30	36.30	44.20	48.20	50.70	53.10	55.55	58.75	59.85	62.25	66.00	66.75	67.50	69.20	73.70	76.90	79.80	89.75	112.00
	Gray Tubes	3.85	3.85	3.50	4.55	4.90	5.00	5.00	6.15	6.35	6.70	6.85	7.05	7.25	8.15	8.25	8.35	8.50	8.80	9.90	10.20	11.00	10.35	12.15	12.15
DURAL	Plain Red Tubes	3.40	3.40	3.50	4.55	4.90	5.00	5.00	6.15	6.35	6.70	6.85	7.05	7.25	8.15	8.25	8.35	8.50	8.80	9.90	10.20	11.00	10.35	12.15	12.15
	Gray Tubes	3.35	3.35	3.50	4.55	4.90	5.00	5.00	6.15	6.35	6.70	6.85	7.05	7.25	8.15	8.25	8.35	8.50	8.80	9.90	10.20	11.00	10.35	12.15	12.15
EHMAN	Track and Non-Skid Red Tubes	16.40	15.85	20.65	20.65	24.25	24.25	24.25	31.75	32.30	33.70	34.55	39.40	40.50	45.85	45.85	46.60	48.60	49.40	56.60	55.55	62.90	58.80	88.00	91.00
	Gray Tubes	3.85	3.85	3.50	4.55	4.90	5.00	5.00	6.15	6.35	6.70	6.85	7.05	7.25	8.15	8.25	8.35	8.50	8.80	9.90	10.20	11.00	10.35	12.15	12.15
EMPIRE	Smooth Gray Non-Skid Red Tubes	17.60	18.50	22.45	22.45	24.65	24.65	24.65	36.40	37.05	38.70	39.40	45.60	45.60	50.85	50.85	51.60	53.25	53.25	59.00	65.35	66.35	69.25	89.75	112.00
	Gray Tubes	3.80	3.80	3.50	4.55	4.90	5.00	5.00	6.15	6.35	6.70	6.85	7.05	7.25	8.15	8.25	8.35	8.50	8.80	9.90	10.20	11.00	10.35	12.15	12.15
ENDURANCE	Ball Bearing Non-Skid Red Tubes	3.80	3.80	3.50	4.55	4.90	5.00	5.00	6.15	6.35	6.70	6.85	7.05	7.25	8.15	8.25	8.35	8.50	8.80	9.90	10.20	11.00	10.35	12.15	12.15
	Gray Tubes	4.25	4.25	4.50	5.40	5.50	5.60	5.60	6.75	7.05	7.25	7.50	8.00	8.00	9.20	9.20	9.40	9.65	9.85	10.12	11.35	11.70	12.90	13.30	13.30
FALLS	“Never Slip” Non-Skid Pure Gum Green Tubes	3.60	3.65	3.85	4.65	4.70	4.80	4.80	5.95	6.20	6.40	6.45	6.80	7.05	8.00	8.15	8.55	8.55	8.75	8.90	10.45	11.00	11.10	12.20	12.20
	Gray Tubes	3.60	3.65	3.85	4.65	4.70	4.80	4.80	5.95	6.20	6.40	6.45	6.80	7.05	8.00	8.15	8.55	8.55	8.75	8.90	10.45	11.00	11.10	12.20	12.20
FEDERAL	Plain Traction Tread Rugged Red Tubes	17.85	18.50	22.45	22.45	24.65	24.65	24.65	36.40	37.05	38.70	39.40	45.60	45.60	50.85	50.85	51.60	53.25	53.25	59.00	65.35	66.35	69.25	89.75	112.00
	Gray Tubes	3.80	3.80	3.50	4.55	4.90	5.00	5.00	6.15	6.35	6.70	6.85	7.05	7.25	8.15	8.25	8.35	8.50	8.80	9.90	10.20	11.00	10.35	12.15	12.15
FIRESTONE	Round Tread Non-Skid Gray Tubes	14.85	15.55	19.75	19.75	21.50	21.50	21.50	31.00	31.50	33.00	34.00	41.25	42.50	47.75	47.75	48.50	50.00	50.00	56.00	56.00	57.00	59.00	79.00	82.00
	Triple Tread Non-Skid Gray Tubes	16.90	18.00	23.00	23.00	24.60	24.60	24.60	36.40	37.05	38.70	39.40	45.60	45.60	50.85	50.85	51.60	53.25	53.25	59.00	65.35	66.35	69.25	89.75	112.00
FISK	Gray and Black Non-Skid Red Non-Skid Ribbed Card Non-Skid Gray Tubes	3.25	3.25	3.50	4.00	4.15	4.25	4.25	5.00	5.00	5.45	5.75	6.00	6.30	6.95	7.05	7.25	7.35	7.55	7.80	8.90	9.25	9.25	11.10	11.10
	Gray Tubes	3.25	3.25	3.50	4.00	4.15	4.25	4.25	5.00	5.00	5.45	5.75	6.00	6.30	6.95	7.05	7.25	7.35	7.55	7.80	8.90	9.25	9.25	11.10	11.10
G & J	“G” Anti-Skid Stalwart Tread Card Gray Tubes	14.00	15.20	19.75	19.75	21.50	21.50	21.50	31.00	31.50	33.00	34.00	41.25	42.50	47.75	47.75	48.50	50.00	50.00	56.00	56.00	57.00	59.00	79.00	82.00
	Red Tubes	14.70	15.95	20.70	20.70	22.40	22.40	22.40	32.00	32.50	34.00	35.00	42.25	43.50	48.75	48.75	49.50	51.00	51.00	57.00	57.00	58.00	60.00	80.00	83.00



Name	Trade Name and Tread	28x3	30x3	32x3	30x3 1/2	31x3 1/2	32x3 1/2	34x3 1/2	31x4	32x4	33x4	34x4	35x4	36x4	32 4 1/2	33 4 1/2	34x4 1/2	35x4 1/2	36x4 1/2	37x4 1/2	35x5	37x5	37x5 1/2	38x5 1/2
GENERAL	Plain	18.95	20.20	21.50	23.15	24.35	25.55	26.75	28.00	29.25	30.50	31.75	33.00	34.25	35.50	36.75	38.00	39.25	40.50	41.75	43.00	44.25	45.50	46.75
	Non-Skid Fabric	20.20	21.50	22.75	24.35	25.55	26.75	28.00	29.25	30.50	31.75	33.00	34.25	35.50	36.75	38.00	39.25	40.50	41.75	43.00	44.25	45.50	46.75	48.00
	Gray Tubes	3.40	3.50	3.60	4.05	4.30	4.55	4.80	5.05	5.30	5.55	5.80	6.05	6.30	6.55	6.80	7.05	7.30	7.55	7.80	8.05	8.30	8.55	8.80
	Red Tubes	3.90	3.95	4.05	4.95	5.10	5.25	5.40	5.65	5.90	6.15	6.40	6.65	6.90	7.15	7.40	7.65	7.90	8.15	8.40	8.65	8.90	9.15	9.40
GILLETTE SAFETY	Rib Tread Cord				q642.30	q644.50	q646.75	q649.00	q651.25	q653.50	q655.75	q658.00	q660.25	q662.50	q664.75	q667.00	q669.25	q671.50	q673.75	q676.00	q678.25	q680.50	q682.75	q685.00
	Non-Skid Cord				q644.50	q646.75	q649.00	q651.25	q653.50	q655.75	q658.00	q660.25	q662.50	q664.75	q667.00	q669.25	q671.50	q673.75	q676.00	q678.25	q680.50	q682.75	q685.00	q687.25
	Plain	16.40	15.25	17.00	19.75	20.50	21.25	22.00	22.75	23.50	24.25	25.00	25.75	26.50	27.25	28.00	28.75	29.50	30.25	31.00	31.75	32.50	33.25	34.00
	Ribbed Non-Skid	17.25			23.50	24.25	25.00	25.75	26.50	27.25	28.00	28.75	29.50	30.25	31.00	31.75	32.50	33.25	34.00	34.75	35.50	36.25	37.00	37.75
GI OBE	Plain Cord				35.20	36.00	36.75	37.50	38.25	39.00	39.75	40.50	41.25	42.00	42.75	43.50	44.25	45.00	45.75	46.50	47.25	48.00	48.75	49.50
	Non-Skid Cord				39.65	40.40	41.15	41.90	42.65	43.40	44.15	44.90	45.65	46.40	47.15	47.90	48.65	49.40	50.15	50.90	51.65	52.40	53.15	53.90
	Gray Tubes	2.75	3.00		8.75	8.40	8.05	7.70	7.35	7.00	6.65	6.30	5.95	5.60	5.25	4.90	4.55	4.20	3.85	3.50	3.15	2.80	2.45	2.10
	Hard Service Red Tube				4.65																			
GOODRICH	Plain	15.20	15.85	16.50	19.10	19.60	20.10	20.60	21.10	21.60	22.10	22.60	23.10	23.60	24.10	24.60	25.10	25.60	26.10	26.60	27.10	27.60	28.10	28.60
	Safety Tread				20.70	21.20	21.70	22.20	22.70	23.20	23.70	24.20	24.70	25.20	25.70	26.20	26.70	27.20	27.70	28.20	28.70	29.20	29.70	30.20
	Gray Tubes	3.45	3.55	3.65	4.20	4.40	4.60	4.80	5.00	5.20	5.40	5.60	5.80	6.00	6.20	6.40	6.60	6.80	7.00	7.20	7.40	7.60	7.80	8.00
	Brown Tubes	3.80			4.75																			
S. S. SILVERTOWN	Ribbed Tread				41.35	42.00	42.65	43.30	43.95	44.60	45.25	45.90	46.55	47.20	47.85	48.50	49.15	49.80	50.45	51.10	51.75	52.40	53.05	53.70
	Non-Skid Ribbed Tread				41.35	42.00	42.65	43.30	43.95	44.60	45.25	45.90	46.55	47.20	47.85	48.50	49.15	49.80	50.45	51.10	51.75	52.40	53.05	53.70
	Gray Tubes	3.35	3.50	3.65	4.00	4.20	4.40	4.60	4.80	5.00	5.20	5.40	5.60	5.80	6.00	6.20	6.40	6.60	6.80	7.00	7.20	7.40	7.60	7.80
	Heavy Tourist Tubes	4.35			4.95																			
OODYEAR	Plain	15.80	16.50	17.20	19.80	20.30	20.80	21.30	21.80	22.30	22.80	23.30	23.80	24.30	24.80	25.30	25.80	26.30	26.80	27.30	27.80	28.30	28.80	29.30
	All-Weather				22.50	23.00	23.50	24.00	24.50	25.00	25.50	26.00	26.50	27.00	27.50	28.00	28.50	29.00	29.50	30.00	30.50	31.00	31.50	32.00
	Ribbed Tread Cord				38.70	39.20	39.70	40.20	40.70	41.20	41.70	42.20	42.70	43.20	43.70	44.20	44.70	45.20	45.70	46.20	46.70	47.20	47.70	48.20
	All-Weather Cord				41.65	42.15	42.65	43.15	43.65	44.15	44.65	45.15	45.65	46.15	46.65	47.15	47.65	48.15	48.65	49.15	49.65	50.15	50.65	51.15
GORDON	Heavy Tourist Tubes	4.35			4.95																			
	Retraction Tread				22.50	23.00	23.50	24.00	24.50	25.00	25.50	26.00	26.50	27.00	27.50	28.00	28.50	29.00	29.50	30.00	30.50	31.00	31.50	32.00
	Triangle Tread				22.50	23.00	23.50	24.00	24.50	25.00	25.50	26.00	26.50	27.00	27.50	28.00	28.50	29.00	29.50	30.00	30.50	31.00	31.50	32.00
	Gray Tubes	3.40	3.55	3.70	4.05	4.30	4.55	4.80	5.05	5.30	5.55	5.80	6.05	6.30	6.55	6.80	7.05	7.30	7.55	7.80	8.05	8.30	8.55	8.80
GREEN BAY PEERLESS	Ribbed Tread				22.50	23.00	23.50	24.00	24.50	25.00	25.50	26.00	26.50	27.00	27.50	28.00	28.50	29.00	29.50	30.00	30.50	31.00	31.50	32.00
	Non-Skid				22.50	23.00	23.50	24.00	24.50	25.00	25.50	26.00	26.50	27.00	27.50	28.00	28.50	29.00	29.50	30.00	30.50	31.00	31.50	32.00
	Gray Tubes	3.35	3.50	3.65	4.00	4.20	4.40	4.60	4.80	5.00	5.20	5.40	5.60	5.80	6.00	6.20	6.40	6.60	6.80	7.00	7.20	7.40	7.60	7.80
	Red Tubes	3.85			4.75																			
GRYPHON	Non-Skid	15.60	16.50	17.40	19.25	20.70	22.15	23.60	25.05	26.50	27.95	29.40	30.85	32.30	33.75	35.20	36.65	38.10	39.55	41.00	42.45	43.90	45.35	46.80
	Red Tubes	3.70	3.85	4.00	4.40	4.65	4.90	5.15	5.40	5.65	5.90	6.15	6.40	6.65	6.90	7.15	7.40	7.65	7.90	8.15	8.40	8.65	8.90	
	Gray Tubes	3.25	3.40	3.55	3.70	3.85	4.00	4.15	4.30	4.45	4.60	4.75	4.90	5.05	5.20	5.35	5.50	5.65	5.80	5.95	6.10	6.25	6.40	
	Heavy Red Antimony Tube	3.95	4.05	4.25	4.85	4.90	5.05	5.35	5.65	5.95	6.25	6.55	6.85	7.15	7.45	7.75	8.05	8.35	8.65	8.95	9.25	9.55	9.85	10.15
HAMILTON	Plain	15.90	16.50	17.10	19.75	20.25	20.75	21.25	21.75	22.25	22.75	23.25	23.75	24.25	24.75	25.25	25.75	26.25	26.75	27.25	27.75	28.25	28.75	29.25
	Non-Skid				22.05	22.55	23.05	23.55	24.05	24.55	25.05	25.55	26.05	26.55	27.05	27.55	28.05	28.55	29.05	29.55	30.05	30.55	31.05	31.55
	Tubes	3.70	3.85	4.00	4.40	4.65	4.90	5.15	5.40	5.65	5.90	6.15	6.40	6.65	6.90	7.15	7.40	7.65	7.90	8.15	8.40	8.65	8.90	
	Heavy Red Antimony Tube				4.50	4.55	4.60	4.90	5.20	5.50	5.80	6.10	6.40	6.70	7.00	7.30	7.60	7.90	8.20	8.50	8.80	9.10	9.40	9.70
HANES	Plain	15.90	16.50	17.10	19.75	20.25	20.75	21.25	21.75	22.25	22.75	23.25	23.75	24.25	24.75	25.25	25.75	26.25	26.75	27.25	27.75	28.25	28.75	29.25
	Non-Skid				22.05	22.55	23.05	23.55	24.05	24.55	25.05	25.55	26.05	26.55	27.05	27.55	28.05	28.55	29.05	29.55	30.05	30.55	31.05	31.55
	Tubes	3.70	3.85	4.00	4.40	4.65	4.90	5.15	5.40	5.65	5.90	6.15	6.40	6.65	6.90	7.15	7.40	7.65	7.90	8.15	8.40	8.65	8.90	
	Heavy Red Antimony Tube				4.50	4.55	4.60	4.90	5.20	5.50	5.80	6.10	6.40	6.70	7.00	7.30	7.60	7.90	8.20	8.50	8.80	9.10	9.40	9.70
HARDMAN SENIOR	Plain	20.75	22.50	24.25	26.00	27.75	29.50	31.25	33.00	34.75	36.50	38.25	40.00	41.75	43.50	45.25	47.00	48.75	50.50	52.25	54.00	55.75	57.50	59.25
	Non-Skid				26.00	27.75	29.50	31.25	33.00	34.75	36.50	38.25	40.00	41.75	43.50	45.25	47.00	48.75	50.50	52.25	54.00	55.75	57.50	59.25
	Red Tubes	3.95	4.10	4.25	4.65	4.90	5.15	5.40	5.65	5.90	6.15	6.40	6.65	6.90	7.15	7.40	7.65	7.90	8.15	8.40	8.65	8.90	9.15	9.40
	Gray Tubes	3.15	3.30	3.45	3.85	4.10	4.35	4.60	4.85	5.10	5.35	5.60	5.85	6.10	6.35	6.60	6.85	7.10	7.35	7.60	7.85	8.10	8.35	8.60
HARDMAN JUNIOR	Plain	18.00	19.50	21.00	22.50	24.00	25.50	27.00	28.50	30.00	31.50	33.00	34.50	36.00	37.50	39.00	40.50	42.00	43.50	45.00	46.50	48.00	49.50	51.00
	Non-Skid				22.50	24.00	25.50	27.00	28.50	30.00	31.50	33.00	34.50	36.00	37.50	39.00	40.50	42.00	43.50	45.00	46.50	48.00	49.50	51.00
	Gray Tubes	3.15	3.30	3.45	3.85	4.10	4.35	4.60	4.85	5.10	5.35	5.60	5.85	6.10	6.35	6.60	6.85	7.10	7.35	7.60	7.85	8.10	8.35	8.60
	Red Tubes	4.00			5.10	5.30	5.50	5.70	5.90	6.10	6.30	6.50	6.70	6.90	7.10	7.30	7.50	7.70	7.90	8.10	8.30	8.50	8.70	8.90
HARTFORD V.	Plain	14.00	15.25	16.50	18.75	19.75	20.75	21.75	22.75	23.75	24.75	25.75	26.75	27.75	28.75	29.75	30.75	31.75	32.75	33.75	34.75	35.75	36.75	37.75
	Non-Skid				20.75	21.75	22.75	23.75	24.75	25.75	26.75	27.75	28.75	29.75	30.75	31.75	32.75	33.75	34.75	35.75	36.75	37.75	38.75	39.75
	Gray Tubes	3.15	3.30	3.45	3.85	4.10	4.35	4.60	4.85	5.10	5.35	5.60	5.85	6.10	6.35	6.60	6.85	7.10	7.35	7.60	7.85	8.10	8.35	8.60
	Red Tubes	4.00			5.10	5.30	5.50	5.70	5.90	6.10	6.													

NOTE—The letter c means that a CLINCHER tire is NOT made in this size; a that a QUICK DETACHABLE is not made in this size, and s that a STRAIGHT SIDE is not made in this size.



## TIRES AND TUBES—Continued

Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
HIGHWAY	Non-Skid Red Tubes	qs16.35	qs15.70	qs20.20	4.65	4.35	4.25	4.35	qs31.35	q32.10	c33.45	c34.35	6.85	7.00	7.80	7.85	8.05	8.15	8.25	8.50	9.80	9.80	9.90	9.90	
	Gray Tubes	3.85	3.75	4.20	4.60	4.35	4.25	4.35	6.05	6.15	6.45	6.70	6.25	6.00	7.15	7.15	7.10	7.20	7.35	7.70	8.80	8.80	9.00	9.00	
	Plain	20.30	20.80	22.35	27.50	29.45	30.95	33.10	36.20	36.85	37.55	38.50	39.60	40.65	53.00	53.80	55.95	57.40	58.50	59.85	68.85	70.20	71.35	91.50	92.50
	Ribbed Tread	24.30	24.85	27.00	31.00	34.15	35.45	37.95	42.90	43.75	44.95	46.75	48.95	51.45	61.05	61.95	62.00	63.90	65.75	70.30	77.40	79.00	90.50	96.65	100.65
HOOD	Non-Skid	24.00	24.55	31.00	34.15	35.45	37.95	37.95	42.90	43.75	44.95	46.75	48.95	51.45	61.05	61.95	62.00	63.90	65.75	70.30	77.40	79.00	90.50	96.65	100.65
	Puritan Plain	qs16.75	qs16.75	qs20.35	25.25	25.25	25.25	25.25	q31.90	q32.70	c33.45	c34.35	6.85	7.00	7.80	7.85	8.05	8.15	8.25	8.50	9.80	9.80	9.90	9.90	
	Gray Tubes	3.85	3.85	3.90	4.65	4.35	4.25	4.35	6.05	6.15	6.45	6.50	6.25	6.00	7.15	7.15	7.10	7.20	7.35	7.70	8.80	8.80	9.00	9.00	
	Head Red and Gray Tubes	3.40	3.45	4.05	4.20	4.40	4.40	4.80	q33.30	q33.75	c33.45	c34.35	6.85	7.00	7.80	7.85	8.05	8.15	8.25	8.50	9.80	9.80	9.90	9.90	
HOWE	Ribbed Tread	qs21.90	qs26.45	qs26.45	29.75	31.55	32.45	33.10	q33.90	q34.55	q35.70	q36.85	q38.00	q39.15	q40.30	q41.45	q42.60	q43.75	q44.90	q46.05	q47.20	q48.35	q49.50	q50.65	11.00
	Non-Skid	3.90	4.00	4.80	4.85	5.00	5.30	5.30	6.20	6.40	6.60	6.80	7.00	7.20	8.40	8.60	8.80	9.00	9.20	9.40	10.65	11.10	11.95	12.10	
	Red Tubes	3.20	3.30	3.85	3.95	4.15	4.35	4.35	5.25	5.35	5.50	5.65	5.85	6.05	6.70	6.75	6.90	7.10	7.30	7.60	8.60	8.80	9.00	10.40	
	Gray Tubes	3.20	3.30	3.85	3.95	4.15	4.35	4.35	5.25	5.35	5.50	5.65	5.85	6.05	6.70	6.75	6.90	7.10	7.30	7.60	8.60	8.80	9.00	10.40	
INDIANA	Plain	13.50	14.00	18.25	19.50	21.10	23.80	23.80	27.85	28.35	30.00	30.45	31.65	32.90	37.90	40.85	41.75	43.25	43.95	53.75	50.90	51.75	53.05		
	Button and Traction Non-Skid	15.15	15.70	19.95	21.35	23.00	26.95	26.95	31.50	32.05	33.90	34.50	36.30	37.40	43.40	46.35	47.25	48.60	49.15	60.00	59.95	61.05	63.10		
	Gray Tubes	2.85	2.90	3.35	3.45	3.60	3.75	3.95	4.00	4.85	5.05	5.20	5.35	5.45	6.40	6.50	6.70	6.95	7.10	7.70	7.90	8.15	8.55		
	Brown Tubes	3.30	3.40	3.80	4.15	4.25	4.40	4.65	5.50	5.65	5.90	6.15	6.30	6.45	7.15	7.30	7.45	7.70	7.85	8.65	8.65	8.85	9.00		
KELLY-SPRINGFIELD	Plain	qs22.15	qs26.85	qs26.85	29.75	31.55	32.45	33.10	q33.90	q34.55	q35.70	q36.85	q38.00	q39.15	q40.30	q41.45	q42.60	q43.75	q44.90	q46.05	q47.20	q48.35	q49.50	q50.65	11.00
	Driving Tread	qs26.35	qs32.95	qs32.95	36.50	38.30	39.20	40.10	q38.50	q39.15	q40.30	q41.45	q42.60	q43.75	q44.90	q46.05	q47.20	q48.35	q49.50	q50.65	q51.80	q52.95	q54.10	q55.25	11.00
	Kant-Slip Tread	4.05	4.25	4.40	4.55	4.70	4.85	5.00	5.15	5.30	5.45	5.60	5.75	5.90	6.05	6.20	6.35	6.50	6.65	6.80	6.95	7.10	7.25	7.40	11.00
	Red Tubes	4.05	4.25	4.40	4.55	4.70	4.85	5.00	5.15	5.30	5.45	5.60	5.75	5.90	6.05	6.20	6.35	6.50	6.65	6.80	6.95	7.10	7.25	7.40	11.00
KNIGHT	Blackstone Non-Skid	qs17.45	qs21.50	qs22.35	25.30	27.10	28.90	30.70	q34.80	q35.50	q36.20	q36.90	q37.60	q38.30	q39.00	q39.70	q40.40	q41.10	q41.80	q42.50	q43.20	q43.90	q44.60	q45.30	13.60
	Knight Non-Skid	qs23.70	qs28.75	qs29.65	32.60	34.40	36.20	38.00	q38.60	q39.30	q40.00	q40.70	q41.40	q42.10	q42.80	q43.50	q44.20	q44.90	q45.60	q46.30	q47.00	q47.70	q48.40	q49.10	13.60
	Blackstone Tubes	3.40	3.50	3.95	4.15	4.30	4.45	4.60	4.75	4.90	5.05	5.20	5.35	5.50	5.65	5.80	5.95	6.10	6.25	6.40	6.55	6.70	6.85	7.00	13.60
	Knight Red Tubes	4.25	4.35	4.80	4.95	5.10	5.25	5.40	5.55	5.70	5.85	6.00	6.15	6.30	6.45	6.60	6.75	6.90	7.05	7.20	7.35	7.50	7.65	7.80	13.60
KOKOMO	Gridiron Non-Skid	qs16.85	qs17.50	qs22.35	25.30	27.10	28.90	30.70	q34.80	q35.50	q36.20	q36.90	q37.60	q38.30	q39.00	q39.70	q40.40	q41.10	q41.80	q42.50	q43.20	q43.90	q44.60	q45.30	13.60
	Standard Gray Tubes	2.90	3.05	3.25	3.40	3.55	3.70	3.85	3.95	4.10	4.25	4.40	4.55	4.70	4.85	5.00	5.15	5.30	5.45	5.60	5.75	5.90	6.05	6.20	13.60
	Standard Red Tubes	3.25	3.35	3.50	3.65	3.80	3.95	4.10	4.25	4.40	4.55	4.70	4.85	5.00	5.15	5.30	5.45	5.60	5.75	5.90	6.05	6.20	6.35	6.50	13.60
	Everlast Red Tubes	3.45	3.55	3.95	4.10	4.25	4.40	4.55	4.70	4.85	5.00	5.15	5.30	5.45	5.60	5.75	5.90	6.05	6.20	6.35	6.50	6.65	6.80	6.95	13.60
LANCASTER	Clingstone Black Plain or Non-Skid	17.50	18.50	23.50	25.30	27.10	28.90	30.70	q34.80	q35.50	q36.20	q36.90	q37.60	q38.30	q39.00	q39.70	q40.40	q41.10	q41.80	q42.50	q43.20	q43.90	q44.60	q45.30	13.60
	Clingstone White Plain or Non-Skid	14.75	15.85	20.65	21.70	22.85	24.00	25.15	q35.50	q36.20	q36.90	q37.60	q38.30	q39.00	q39.70	q40.40	q41.10	q41.80	q42.50	q43.20	q43.90	q44.60	q45.30	q46.00	13.60
	Clingtona Tubes	2.95	3.35	4.05	4.15	4.25	4.35	4.45	4.55	4.65	4.75	4.85	4.95	5.05	5.15	5.25	5.35	5.45	5.55	5.65	5.75	5.85	5.95	6.05	13.60
	Lancaster Plain	20.25	21.00	26.25	27.00	27.75	28.50	29.25	q36.20	q36.90	q37.60	q38.30	q39.00	q39.70	q40.40	q41.10	q41.80	q42.50	q43.20	q43.90	q44.60	q45.30	q46.00	q46.70	13.60
LEE	Standard Plain	16.55	17.70	20.75	22.45	24.15	25.85	27.55	q36.20	q36.90	q37.60	q38.30	q39.00	q39.70	q40.40	q41.10	q41.80	q42.50	q43.20	q43.90	q44.60	q45.30	q46.00	q46.70	13.60
	Standard Non-Skid	18.20	19.20	22.80	24.50	26.20	27.90	29.60	q37.60	q38.30	q39.00	q39.70	q40.40	q41.10	q41.80	q42.50	q43.20	q43.90	q44.60	q45.30	q46.00	q46.70	q47.40	q48.10	13.60
	Puncture Proof Plain	28.30	28.25	31.70	33.25	34.75	36.25	37.75	q38.30	q39.00	q39.70	q40.40	q41.10	q41.80	q42.50	q43.20	q43.90	q44.60	q45.30	q46.00	q46.70	q47.40	q48.10	q48.80	13.60
	Puncture Proof Non-Skid	31.10	31.10	34.90	36.45	37.95	39.45	40.95	q39.00	q39.70	q40.40	q41.10	q41.80	q42.50	q43.20	q43.90	q44.60	q45.30	q46.00	q46.70	q47.40	q48.10	q48.80	q49.50	13.60
LIBERTY	Groove Tread Cord	3.40	3.75	4.40	4.50	4.60	4.70	4.80	q36.20	q36.90	q37.60	q38.30	q39.00	q39.70	q40.40	q41.10	q41.80	q42.50	q43.20	q43.90	q44.60	q45.30	q46.00	q46.70	13.60
	Zig Zag Tread Cord	3.40	3.75	4.40	4.50	4.60	4.70	4.80	q36.20	q36.90	q37.60	q38.30	q39.00	q39.70	q40.40	q41.10	q41.80	q42.50	q43.20	q43.90	q44.60	q45.30	q46.00	q46.70	13.60
	Gray Tubes	3.75</																							

Name	Trade Name and Trade	28x3	30x3	32x3	30x3 1/2	31x3 1/2	32x3 1/2	34x3 1/2	31x4	32x4	33x4	34x4	35x4	36x4	32x4 1/2	33x4 1/2	34x4 1/2	35x4 1/2	36x4 1/2	32x4 1/4	33x4 1/4	34x4 1/4	35x4 1/4	36x4 1/4	32x4 1/8	33x4 1/8	34x4 1/8	35x4 1/8	36x4 1/8	32x4 1/16	33x4 1/16	34x4 1/16	35x4 1/16	36x4 1/16	32x4 1/32	33x4 1/32	34x4 1/32	35x4 1/32	36x4 1/32	32x4 1/64	33x4 1/64	34x4 1/64	35x4 1/64	36x4 1/64	32x4 1/128	33x4 1/128	34x4 1/128	35x4 1/128	36x4 1/128	32x4 1/256	33x4 1/256	34x4 1/256	35x4 1/256	36x4 1/256	32x4 1/512	33x4 1/512	34x4 1/512	35x4 1/512	36x4 1/512	32x4 1/1024	33x4 1/1024	34x4 1/1024	35x4 1/1024	36x4 1/1024	32x4 1/2048	33x4 1/2048	34x4 1/2048	35x4 1/2048	36x4 1/2048	32x4 1/4096	33x4 1/4096	34x4 1/4096	35x4 1/4096	36x4 1/4096	32x4 1/8192	33x4 1/8192	34x4 1/8192	35x4 1/8192	36x4 1/8192	32x4 1/16384	33x4 1/16384	34x4 1/16384	35x4 1/16384	36x4 1/16384	32x4 1/32768	33x4 1/32768	34x4 1/32768	35x4 1/32768	36x4 1/32768	32x4 1/65536	33x4 1/65536	34x4 1/65536	35x4 1/65536	36x4 1/65536	32x4 1/131072	33x4 1/131072	34x4 1/131072	35x4 1/131072	36x4 1/131072	32x4 1/262144	33x4 1/262144	34x4 1/262144	35x4 1/262144	36x4 1/262144	32x4 1/524288	33x4 1/524288	34x4 1/524288	35x4 1/524288	36x4 1/524288	32x4 1/1048576	33x4 1/1048576	34x4 1/1048576	35x4 1/1048576	36x4 1/1048576	32x4 1/2097152	33x4 1/2097152	34x4 1/2097152	35x4 1/2097152	36x4 1/2097152	32x4 1/4194304	33x4 1/4194304	34x4 1/4194304	35x4 1/4194304	36x4 1/4194304	32x4 1/8388608	33x4 1/8388608	34x4 1/8388608	35x4 1/8388608	36x4 1/8388608	32x4 1/16777216	33x4 1/16777216	34x4 1/16777216	35x4 1/16777216	36x4 1/16777216	32x4 1/33554432	33x4 1/33554432	34x4 1/33554432	35x4 1/33554432	36x4 1/33554432	32x4 1/67108864	33x4 1/67108864	34x4 1/67108864	35x4 1/67108864	36x4 1/67108864	32x4 1/134217728	33x4 1/134217728	34x4 1/134217728	35x4 1/134217728	36x4 1/134217728	32x4 1/268435456	33x4 1/268435456	34x4 1/268435456	35x4 1/268435456	36x4 1/268435456	32x4 1/536870912	33x4 1/536870912	34x4 1/536870912	35x4 1/536870912	36x4 1/536870912	32x4 1/1073741824	33x4 1/1073741824	34x4 1/1073741824	35x4 1/1073741824	36x4 1/1073741824	32x4 1/2147483648	33x4 1/2147483648	34x4 1/2147483648	35x4 1/2147483648	36x4 1/2147483648	32x4 1/4294967296	33x4 1/4294967296	34x4 1/4294967296	35x4 1/4294967296	36x4 1/4294967296	32x4 1/8589934592	33x4 1/8589934592	34x4 1/8589934592	35x4 1/8589934592	36x4 1/8589934592	32x4 1/17179869184	33x4 1/17179869184	34x4 1/17179869184	35x4 1/17179869184	36x4 1/17179869184	32x4 1/34359738368	33x4 1/34359738368	34x4 1/34359738368	35x4 1/34359738368	36x4 1/34359738368	32x4 1/68719476736	33x4 1/68719476736	34x4 1/68719476736	35x4 1/68719476736	36x4 1/68719476736	32x4 1/137438953472	33x4 1/137438953472	34x4 1/137438953472	35x4 1/137438953472	36x4 1/137438953472	32x4 1/274877906944	33x4 1/274877906944	34x4 1/274877906944	35x4 1/274877906944	36x4 1/274877906944	32x4 1/549755813888	33x4 1/549755813888	34x4 1/549755813888	35x4 1/549755813888	36x4 1/549755813888	32x4 1/1099511627776	33x4 1/1099511627776	34x4 1/1099511627776	35x4 1/1099511627776	36x4 1/1099511627776	32x4 1/2199023255552	33x4 1/2199023255552	34x4 1/2199023255552	35x4 1/2199023255552	36x4 1/2199023255552	32x4 1/4398046511104	33x4 1/4398046511104	34x4 1/4398046511104	35x
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**NOTE**—The letter *c* means that a **CLINCHER** tire is **NOT** made in this size; the letter *q* that a **QUICK-DETACHABLE** is not made in this size, and *s* that a **STRAIGHT SIDE** is not made in this size.



## TIRES AND TUBES—Continued

Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
QUAKER	Plain	s18.40	s19.45	s20.55	s20.55	s21.75	s22.85	s23.95	s24.10	s25.30	s26.40	s27.50	s28.60	s29.70	s30.80	s31.90	s33.00	s34.10	s35.20	s36.30	s37.40	s38.50	s39.60	s40.70	s41.80
	T.T.T. Non-Skid	s20.70	s21.75	s22.85	s23.95	s25.05	s26.15	s27.25	s28.35	s29.45	s30.55	s31.65	s32.75	s33.85	s34.95	s36.05	s37.15	s38.25	s39.35	s40.45	s41.55	s42.65	s43.75	s44.85	
	Gray Tubes	s3.20	s3.35	s3.50	s3.65	s3.80	s3.95	s4.10	s4.25	s4.40	s4.55	s4.70	s4.85	s5.00	s5.15	s5.30	s5.45	s5.60	s5.75	s5.90	s6.05	s6.20	s6.35	s6.50	s6.65
RACINE	Plain	qs15.60	qs16.70	qs17.80	qs18.90	qs19.50	qs20.60	qs21.70	qs22.80	qs23.90	qs25.00	qs26.10	qs27.20	qs28.30	qs29.40	qs30.50	qs31.60	qs32.70	qs33.80	qs34.90	qs36.00	qs37.10	qs38.20	qs39.30	qs40.40
	Country Road	qs18.20	qs19.30	qs20.40	qs21.50	qs22.60	qs23.70	qs24.80	qs25.90	qs27.00	qs28.10	qs29.20	qs30.30	qs31.40	qs32.50	qs33.60	qs34.70	qs35.80	qs36.90	qs38.00	qs39.10	qs40.20	qs41.30	qs42.40	
	Ribbed Cord	qs17.00	qs18.10	qs19.20	qs20.30	qs21.40	qs22.50	qs23.60	qs24.70	qs25.80	qs26.90	qs28.00	qs29.10	qs30.20	qs31.30	qs32.40	qs33.50	qs34.60	qs35.70	qs36.80	qs37.90	qs39.00	qs40.10	qs41.20	qs42.30
RACINE HORSESHOE	Non-Skid	qs15.60	qs16.70	qs17.80	qs18.90	qs19.50	qs20.60	qs21.70	qs22.80	qs23.90	qs25.00	qs26.10	qs27.20	qs28.30	qs29.40	qs30.50	qs31.60	qs32.70	qs33.80	qs34.90	qs36.00	qs37.10	qs38.20	qs39.30	qs40.40
	Cord Non-Skid	qs18.20	qs19.30	qs20.40	qs21.50	qs22.60	qs23.70	qs24.80	qs25.90	qs27.00	qs28.10	qs29.20	qs30.30	qs31.40	qs32.50	qs33.60	qs34.70	qs35.80	qs36.90	qs38.00	qs39.10	qs40.20	qs41.30	qs42.40	
	Gray Tubes	s3.15	s3.30	s3.45	s3.60	s3.75	s3.90	s4.05	s4.20	s4.35	s4.50	s4.65	s4.80	s4.95	s5.10	s5.25	s5.40	s5.55	s5.70	s5.85	s6.00	s6.15	s6.30	s6.45	s6.60
RECORD	Non-Skid	qs15.75	qs16.85	qs17.95	qs19.05	qs20.15	qs21.25	qs22.35	qs23.45	qs24.55	qs25.65	qs26.75	qs27.85	qs28.95	qs30.05	qs31.15	qs32.25	qs33.35	qs34.45	qs35.55	qs36.65	qs37.75	qs38.85	qs39.95	qs41.05
	Red Tubes	qs15.75	qs16.85	qs17.95	qs19.05	qs20.15	qs21.25	qs22.35	qs23.45	qs24.55	qs25.65	qs26.75	qs27.85	qs28.95	qs30.05	qs31.15	qs32.25	qs33.35	qs34.45	qs35.55	qs36.65	qs37.75	qs38.85	qs39.95	qs41.05
	Gray Tubes	s3.85	s3.75	s3.65	s3.55	s3.45	s3.35	s3.25	s3.15	s3.05	s2.95	s2.85	s2.75	s2.65	s2.55	s2.45	s2.35	s2.25	s2.15	s2.05	s1.95	s1.85	s1.75	s1.65	s1.55
REPUBLIC	Plain	qs15.55	qs16.65	qs17.75	qs18.85	qs19.95	qs21.05	qs22.15	qs23.25	qs24.35	qs25.45	qs26.55	qs27.65	qs28.75	qs29.85	qs30.95	qs32.05	qs33.15	qs34.25	qs35.35	qs36.45	qs37.55	qs38.65	qs39.75	qs40.85
	Staggard Non-Skid	qs18.25	qs19.35	qs20.45	qs21.55	qs22.65	qs23.75	qs24.85	qs25.95	qs27.05	qs28.15	qs29.25	qs30.35	qs31.45	qs32.55	qs33.65	qs34.75	qs35.85	qs36.95	qs38.05	qs39.15	qs40.25	qs41.35	qs42.45	
	Gray Tubes	s3.20	s3.35	s3.50	s3.65	s3.80	s3.95	s4.10	s4.25	s4.40	s4.55	s4.70	s4.85	s5.00	s5.15	s5.30	s5.45	s5.60	s5.75	s5.90	s6.05	s6.20	s6.35	s6.50	s6.65
REVERE	Plain	qs14.00	qs15.10	qs16.20	qs17.30	qs18.40	qs19.50	qs20.60	qs21.70	qs22.80	qs23.90	qs25.00	qs26.10	qs27.20	qs28.30	qs29.40	qs30.50	qs31.60	qs32.70	qs33.80	qs34.90	qs36.00	qs37.10	qs38.20	qs39.30
	"R" Anti-Skid	qs14.70	qs15.80	qs16.90	qs18.00	qs19.10	qs20.20	qs21.30	qs22.40	qs23.50	qs24.60	qs25.70	qs26.80	qs27.90	qs29.00	qs30.10	qs31.20	qs32.30	qs33.40	qs34.50	qs35.60	qs36.70	qs37.80	qs38.90	
	Gray Tubes	s3.15	s3.30	s3.45	s3.60	s3.75	s3.90	s4.05	s4.20	s4.35	s4.50	s4.65	s4.80	s4.95	s5.10	s5.25	s5.40	s5.55	s5.70	s5.85	s6.00	s6.15	s6.30	s6.45	s6.60
SAVAGE	Plain	qs14.15	qs15.25	qs16.35	qs17.45	qs18.55	qs19.65	qs20.75	qs21.85	qs22.95	qs24.05	qs25.15	qs26.25	qs27.35	qs28.45	qs29.55	qs30.65	qs31.75	qs32.85	qs33.95	qs35.05	qs36.15	qs37.25	qs38.35	qs39.45
	Non-Skid	qs16.50	qs17.60	qs18.70	qs19.80	qs20.90	qs22.00	qs23.10	qs24.20	qs25.30	qs26.40	qs27.50	qs28.60	qs29.70	qs30.80	qs31.90	qs33.00	qs34.10	qs35.20	qs36.30	qs37.40	qs38.50	qs39.60	qs40.70	qs41.80
	Gray Tubes	s3.75	s3.90	s4.05	s4.20	s4.35	s4.50	s4.65	s4.80	s4.95	s5.10	s5.25	s5.40	s5.55	s5.70	s5.85	s6.00	s6.15	s6.30	s6.45	s6.60	s6.75	s6.90	s7.05	s7.20
SCHAVOIR	Plain	qs13.35	qs14.45	qs15.55	qs16.65	qs17.75	qs18.85	qs19.95	qs21.05	qs22.15	qs23.25	qs24.35	qs25.45	qs26.55	qs27.65	qs28.75	qs29.85	qs30.95	qs32.05	qs33.15	qs34.25	qs35.35	qs36.45	qs37.55	qs38.65
	Gray Tubes	s3.35	s3.50	s3.65	s3.80	s3.95	s4.10	s4.25	s4.40	s4.55	s4.70	s4.85	s5.00	s5.15	s5.30	s5.45	s5.60	s5.75	s5.90	s6.05	s6.20	s6.35	s6.50	s6.65	s6.80
	Red Tubes	s3.40	s3.55	s3.70	s3.85	s4.00	s4.15	s4.30	s4.45	s4.60	s4.75	s4.90	s5.05	s5.20	s5.35	s5.50	s5.65	s5.80	s5.95	s6.10	s6.25	s6.40	s6.55	s6.70	s6.85
SEMPEL	Plain	qs13.35	qs14.45	qs15.55	qs16.65	qs17.75	qs18.85	qs19.95	qs21.05	qs22.15	qs23.25	qs24.35	qs25.45	qs26.55	qs27.65	qs28.75	qs29.85	qs30.95	qs32.05	qs33.15	qs34.25	qs35.35	qs36.45	qs37.55	qs38.65
	Gray Tubes	s3.35	s3.50	s3.65	s3.80	s3.95	s4.10	s4.25	s4.40	s4.55	s4.70	s4.85	s5.00	s5.15	s5.30	s5.45	s5.60	s5.75	s5.90	s6.05	s6.20	s6.35	s6.50	s6.65	s6.80
	Red Tubes	s3.40	s3.55	s3.70	s3.85	s4.00	s4.15	s4.30	s4.45	s4.60	s4.75	s4.90	s5.05	s5.20	s5.35	s5.50	s5.65	s5.80	s5.95	s6.10	s6.25	s6.40	s6.55	s6.70	s6.85
SOUTHERN	Plain	qs12.80	qs13.90	qs15.00	qs16.10	qs17.20	qs18.30	qs19.40	qs20.50	qs21.60	qs22.70	qs23.80	qs24.90	qs26.00	qs27.10	qs28.20	qs29.30	qs30.40	qs31.50	qs32.60	qs33.70	qs34.80	qs35.90	qs37.00	qs38.10
	Non-Skid	qs14.70	qs15.80	qs16.90	qs18.00	qs19.10	qs20.20	qs21.30	qs22.40	qs23.50	qs24.60	qs25.70	qs26.80	qs27.90	qs29.00	qs30.10	qs31.20	qs32.30	qs33.40	qs34.50	qs35.60	qs36.70	qs37.80	qs38.90	qs40.00
	Gray Tubes	s3.45	s3.60	s3.75	s3.90	s4.05	s4.20	s4.35	s4.50	s4.65	s4.80	s4.95	s5.10	s5.25	s5.40	s5.55	s5.70	s5.85	s6.00	s6.15	s6.30	s6.45	s6.60	s6.75	s6.90
SPEEDWAY	Plain	qs13.66	qs14.76	qs15.86	qs16.96	qs18.06	qs19.16	qs20.26	qs21.36	qs22.46	qs23.56	qs24.66	qs25.76	qs26.86	qs27.96	qs29.06	qs30.16	qs31.26	qs32.36	qs33.46	qs34.56	qs35.66	qs36.76	qs37.86	qs38.96
	Non-Skid	qs15.56	qs16.66	qs17.76	qs18.86	qs19.96	qs21.06	qs22.16	qs23.26	qs24.36	qs25.46	qs26.56	qs27.66	qs28.76	qs29.86	qs30.96	qs32.06	qs33.16	qs34.26	qs35.36	qs36.46	qs37.56	qs38.66	qs39.76	qs40.86
	Gray Tubes	s3.66	s3.81	s3.96	s4.11	s4.26	s4.41	s4.56	s4.71	s4.86	s5.01	s5.16	s5.31	s5.46	s5.61	s5.76	s5.91	s6.06	s6.21	s6.36	s6.51	s6.66	s6.81	s6.96	s7.11
STANDARD FOUR	Super Tread	qs15.50	qs16.60	qs17.70	qs18.80	qs19.90	qs21.00	qs22.10	qs23.20	qs24.30	qs25.40	qs26.50	qs27.60	qs28.70	qs29.80	qs30.90	qs32.00	qs33.10	qs34.20	qs35.30	qs36.40	qs37.50	qs38.60	qs39.70	qs40.80
	Non-Skid	qs17.40	qs18.50	qs19.60	qs20.70	qs21.80	qs22.90	qs24.00	qs25.10	qs26.20	qs27.30	qs28.40	qs29.50	qs30.60	qs31.70	qs32.80	qs33.90	qs35.00	qs36.10	qs37.20	qs38.30	qs39.40	qs40.50	qs41.60	qs42.70
	Gray Tubes	s3.85	s4.00	s4.15	s4.30	s4.45	s4.60	s4.75	s4.90	s5.05	s5.20	s5.35	s5.50	s5.65	s5.80	s5.95	s6.10	s6.25	s6.40	s6.55	s6.70	s6.85	s7.00	s7.15	s7.30
STAR	Ribbed Tread	qs13.40	qs14.50	qs15.60	qs16.70	qs17.80	qs18.90	qs20.00	qs21.10	qs22.20	qs23.30	qs24.40	qs25.50	qs26.60	qs27.70	qs28.80	qs29.90	qs31.00	qs32.10	qs33.20	qs34.30	qs35.40	qs36.50	qs	



Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
THERMOID	Non-Skid and Ribbed Tread	qs24.70	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85
	Brown and Delate Red Tubes	qs3.80	qs3.85	qs3.85	qs3.85	qs3.85	qs3.85	qs3.85	qs3.85	qs3.85	qs3.85	qs3.85	qs3.85	qs3.85	qs3.85	qs3.85	qs3.85	qs3.85	qs3.85	qs3.85	qs3.85	qs3.85	qs3.85	qs3.85	qs3.85
	6000 Mile Plain	17.95	18.60	23.60	22.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95
	6000 Non-Skid	19.60	20.55	26.50	25.60	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25
TOLIVER	6000 Mile Plain	17.45	18.25	23.60	22.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95
	6000 Non-Skid	19.60	20.55	26.50	25.60	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25
	Non-Skid	14.10	15.05	20.40	19.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75
	Gray Tubes	3.10	3.05	3.40	3.75	3.80	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85
TYRIAN	Puncture-proof Inner Tubes	3.60	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90
	Holdite Non-Skid	19.50	20.50	26.50	25.60	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25
	Extra Heavy Red	14.00	15.20	20.40	19.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75
	Urethane Non-Skid	14.70	15.95	21.10	20.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45
UNITED STATES	Plain	14.00	15.20	20.40	19.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75	21.75
	Urethane Non-Skid	14.70	15.95	21.10	20.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45
	Chain Non-Skid	16.40	17.65	22.80	22.15	24.15	24.15	24.15	24.15	24.15	24.15	24.15	24.15	24.15	24.15	24.15	24.15	24.15	24.15	24.15	24.15	24.15	24.15	24.15	24.15
	Nobby Non-Skid	21.70	22.95	28.10	27.45	29.45	29.45	29.45	29.45	29.45	29.45	29.45	29.45	29.45	29.45	29.45	29.45	29.45	29.45	29.45	29.45	29.45	29.45	29.45	29.45
VICTOR	Royal Card Non-Skid	3.15	3.30	3.45	3.75	3.80	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85
	Gray Tubes	4.00	4.10	4.40	4.75	4.80	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85
	Red Tubes	18.80	19.85	25.10	24.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45
	Plain	21.00	22.30	27.55	26.90	28.90	28.90	28.90	28.90	28.90	28.90	28.90	28.90	28.90	28.90	28.90	28.90	28.90	28.90	28.90	28.90	28.90	28.90	28.90	28.90
VIKING	Victor Gray Tubes	3.40	3.65	3.70	4.05	4.10	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15
	Victor Red Tubes	3.75	3.95	4.05	4.40	4.45	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
	Springfield Pure Gray Tubes	3.55	3.95	4.05	4.40	4.45	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
	Springfield Red Tubes	4.00	4.10	4.40	4.75	4.80	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85
VITALIC	Plain	18.80	19.85	25.10	24.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45
	Red and Gray Tubes	4.15	4.25	4.40	4.75	4.80	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85
	Extra Heavy Gray Tubes	4.70	4.80	5.05	5.40	5.45	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
	Indian Red Tubes	3.30	3.35	3.70	4.05	4.10	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15
VULCAN	Gray Tubes	3.30	3.35	3.70	4.05	4.10	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15
	Indian Red Tubes	3.65	3.70	4.05	4.40	4.45	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
	Wearwell Plain	19.15	20.20	25.45	24.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80
	Wearwell Non-Skid	20.60	21.65	26.90	26.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25
WILSON	Wearwell Gray Tubes	3.50	3.55	3.90	4.25	4.30	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35
	Wearwell Red Tubes	3.85	3.90	4.25	4.60	4.65	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70
	Wilson Non-Skid	20.60	21.65	26.90	26.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25
	Wilson Non-Skid	22.10	23.15	28.40	27.75	29.75	29.75	29.75	29.75	29.75	29.75	29.75	29.75	29.75	29.75	29.75	29.75	29.75	29.75	29.75	29.75	29.75	29.75	29.75	29.75
WOODWORTH	Plain	23.90	25.75	31.00	30.35	32.35	32.35	32.35	32.35	32.35	32.35	32.35	32.35	32.35	32.35	32.35	32.35	32.35	32.35	32.35	32.35	32.35	32.35	32.35	32.35
	Non-Skid	25.75	27.60	32.85	32.20	34.20	34.20	34.20	34.20	34.20	34.20	34.20	34.20	34.20	34.20	34.20	34.20	34.20	34.20	34.20	34.20	34.20	34.20	34.20	34.20
	Wearwell Plain	19.15	20.20	25.45	24.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80	26.80
	Wearwell Non-Skid	20.60	21.65	26.90	26.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25
ZEE-ZEE	White Tread Non-Skid	20.70	21.75	27.00	26.35	28.35	28.35	28.35	28.35	28.35	28.35	28.35	28.35	28.35	28.35	28.35	28.35	28.35	28.35	28.35	28.35	28.35	28.35	28.35	28.35
	Brazilian Tread	11.85	12.85	18.10	17.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45
	Climax Non-Skid	11.85	12.85	18.10	17.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45
	Samson Tread Non-Skid	15.31	16.31	21.56	20.91	22.91	22.91	22.91	22.91	22.91	22.91	22.91	22.91	22.91	22.91	22.91	22.91	22.91	22.91	22.91	22.91	22.91	22.91	22.91	22.91

NOTE—The letter c means that a CLINCHER tire is NOT made in this size; q that a QUICK-DETACHABLE is not made in this size, and s that a STRAIGHT SIDE is not made in this size.

These Tables are for your constant consultation and should be of great value in the conduct of your business—

SAVE THEM

# Trucks

# MOTOR WORLD GUIDE

*This table appears in the first issue every month. It is corrected every month and brought up to date.*

[illegible]



Clydesdale	45	146	3653	3653	Cont.	8	4-4151	27.2	4	L. Larine	h	...	ant.	motor	own.	1120 16	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	7.7	Timkn.	Perf.	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross	
Clydesdale	65	150	3654	3654	Cont.	8	4-4151	27.2	4	L. Larine	h	...	ant.	motor	own.	1110 12	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	8.5	Timkn.	Perf.	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross	
Clydesdale	90	152	3655	3655	Cont.	8	4-4151	32.4	2	L. Larine	h	...	ant.	motor	own.	1160 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	4.10	3	Timkn.	Perf.	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Clydesdale	120	150	3656	3656	Cont.	8	4-4151	32.4	2	L. Larine	h	...	ant.	motor	own.	1000 10	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	4.11	6	Timkn.	Perf.	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Callier	M	983	118	3624	Lyngm	3	4-4151	32.4	4	L. Larine	h	...	ant.	motor	own.	1000 10	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	6.0	Stubb.	Perf.	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Columbia	E	1395	144	3634	Cont.	3	4-4151	27.6	4	L. Larine	h	...	ant.	motor	own.	1200 14	Shaprr.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	9.4	Russel.	Perf.	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Comel	E	1395	144	3634	Cont.	3	4-4151	27.6	4	L. Larine	h	...	ant.	motor	own.	1200 14	Shaprr.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	9.4	Russel.	Perf.	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Commerce	E	1340	126	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1383 20	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	7.1	Torbn.	Perf.	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Concord	A	2250	140	3655	Buda.	4	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1275 16	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	7.00	Timkn.	Perf.	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Concord	B	2250	140	3655	Buda.	4	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1275 16	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	7.00	Timkn.	Perf.	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select	unit-m.	3	8.6	Sheldon	Blood	Spicer.	verm.	spgs.	spgs.	int-w.	int-w.	Ross
Corbett	E	2000	130	3643	Cont.	3	4-3151	22.5	4	L. Larine	h	...	ant.	motor	own.	1200 14	Zenth.	g	dd	B-Lipe	B-Lipe	select</												





Model	Price	Engine	Transmission	Drivetrain	Weight	Capacity	Speed	Range	Notes
Indiana	1925 128	4	3423	3444	3445	3446	3447	3448	3449
Indiana	2475 144	8	3633	3634	3635	3636	3637	3638	3639
Indiana	2875 160	8	3834	3835	3836	3837	3838	3839	3840
Indiana	3440 167	8	3935	3936	3937	3938	3939	3940	3941
Indiana	4400 167	8	4036	4037	4038	4039	4040	4041	4042
International Harv. F	1550 125	8	3633	3634	3635	3636	3637	3638	3639
International Harv. G	2900 135	8	3834	3835	3836	3837	3838	3839	3840
International Harv. K	2200 128	8	3633	3634	3635	3636	3637	3638	3639
Junco	2250 144	8	3534	3535	3536	3537	3538	3539	3540
Kearns	850 107	8	3033	3034	3035	3036	3037	3038	3039
Kearns	1750 136	8	3233	3234	3235	3236	3237	3238	3239
Kelly-Springfield K-31	2750 144	8	3633	3634	3635	3636	3637	3638	3639
Kelly-Springfield K-32	2750 144	8	3633	3634	3635	3636	3637	3638	3639
Kelly-Springfield K-33	2750 144	8	3633	3634	3635	3636	3637	3638	3639
Kelly-Springfield K-34	2750 144	8	3633	3634	3635	3636	3637	3638	3639
Kelly-Springfield K-35	2750 144	8	3633	3634	3635	3636	3637	3638	3639
Kelly-Springfield K-36	2750 144	8	3633	3634	3635	3636	3637	3638	3639
Kelly-Springfield K-37	2750 144	8	3633	3634	3635	3636	3637	3638	3639
Kelly-Springfield K-38	2750 144	8	3633	3634	3635	3636	3637	3638	3639
Kelly-Springfield K-39	2750 144	8	3633	3634	3635	3636	3637	3638	3639
Kelly-Springfield K-40	2750 144	8	3633	3634	3635	3636	3637	3638	3639
Kelly-Springfield K-41	2750 144	8	3633	3634	3635	3636	3637	3638	3639
Kelly-Springfield K-42	2750 144	8	3633	3634	3635	3636	3637	3638	3639
Kelly-Springfield K-43	2750 144	8	3633	3634	3635	3636	3637	3638	3639
Kelly-Springfield K-44	2750 144	8	3633	3634	3635	3636	3637	3638	3639
Kelly-Springfield K-45	2750 144	8	3633	3634	3635	3636	3637	3638	3639
Kelly-Springfield K-46	2750 144	8	3633	3634	3635	3636	3637	3638	3639
King	3000 120	8	3633	3634	3635	3636	3637	3638	3639
Kissel-Kar Gen. Utility	2855 152	8	3423	3424	3425	3426	3427	3428	3429
Kissel-Kar Freight	3567 168	8	3633	3634	3635	3636	3637	3638	3639
Kissel-Kar Heavy Duty	3567 168	8	3633	3634	3635	3636	3637	3638	3639
Kissel-Kar Dreadnaught	4350 180	8	3834	3835	3836	3837	3838	3839	3840
Kleber	2400 130	8	3423	3424	3425	3426	3427	3428	3429
Kleber	2650 140	8	3633	3634	3635	3636	3637	3638	3639
Kleber	2950 140	8	3834	3835	3836	3837	3838	3839	3840
Kleber	3500 160	8	4035	4036	4037	4038	4039	4040	4041
Kleber	4100 160	8	4236	4237	4238	4239	4240	4241	4242
Kleber	5100 170	8	4437	4438	4439	4440	4441	4442	4443
Knox Tractor	5000 184	8	4638	4639	4640	4641	4642	4643	4644
Knox Tractor	5500 194	8	4839	4840	4841	4842	4843	4844	4845
Koehler Tractor	1450 120	8	3423	3424	3425	3426	3427	3428	3429
Koehler Tractor	1750 130	8	3633	3634	3635	3636	3637	3638	3639
Koehler Tractor	1985 151	8	3834	3835	3836	3837	3838	3839	3840
Koehler Tractor	2165 160	8	4035	4036	4037	4038	4039	4040	4041
Lamson	1850 150	8	3633	3634	3635	3636	3637	3638	3639
Lamson	2400 160	8	3834	3835	3836	3837	3838	3839	3840
Lamson	3150 170	8	4035	4036	4037	4038	4039	4040	4041
Lane	4150 180	8	4236	4237	4238	4239	4240	4241	4242
Lane	4850 185	8	4437	4438	4439	4440	4441	4442	4443
Lane	5700 190	8	4638	4639	4640	4641	4642	4643	4644
Lane	6700 200	8	4839	4840	4841	4842	4843	4844	4845
Lane	7850 210	8	5039	5040	5041	5042	5043	5044	5045
Lange	1950 135	8	3633	3634	3635	3636	3637	3638	3639
Lange	2650 135	8	3834	3835	3836	3837	3838	3839	3840
Lapeer Tractor	1650 90	8	3423	3424	3425	3426	3427	3428	3429
Larabee	1950 130	8	3423	3424	3425	3426	3427	3428	3429
Larabee	2450 140	8	3633	3634	3635	3636	3637	3638	3639
Larabee	3050 165	8	3834	3835	3836	3837	3838	3839	3840
Larabee	3550 175	8	4035	4036	4037	4038	4039	4040	4041
Larabee	4050 185	8	4236	4237	4238	4239	4240	4241	4242
Larabee	4750 172	8	4437	4438	4439	4440	4441	4442	4443
Larabee	5450 178	8	4638	4639	4640	4641	4642	4643	4644
Larabee	6150 182	8	4839	4840	4841	4842	4843	4844	4845
Larabee	6850 186	8	5039	5040	5041	5042	5043	5044	5045
Larabee	7550 190	8	5239	5240	5241	5242	5243	5244	5245
Larabee	8250 194	8	5439	5440	5441	5442	5443	5444	5445
Larabee	8950 198	8	5639	5640	5641	5642	5643	5644	5645
Larabee	9650 202	8	5839	5840	5841	5842	5843	5844	5845
Larabee	10350 206	8	6039	6040	6041	6042	6043	6044	6045
Larabee	11050 210	8	6239	6240	6241	6242	6243	6244	6245
Larabee	11750 214	8	6439	6440	6441	6442	6443	6444	6445
Larabee	12450 218	8	6639	6640	6641	6642	6643	6644	6645
Larabee	13150 222	8	6839	6840	6841	6842	6843	6844	6845
Larabee	13850 226	8	7039	7040	7041	7042	7043	7044	7045
Larabee	14550 230	8	7239	7240	7241	7242	7243	7244	7245
Larabee	15250 234	8	7439	7440	7441	7442	7443	7444	7445
Larabee	15950 238	8	7639	7640	7641	7642	7643	7644	7645
Larabee	16650 242	8	7839	7840	7841	7842	7843	7844	7845
Larabee	17350 246	8	8039	8040	8041	8042	8043	8044	8045
Larabee	18050 250	8	8239	8240	8241	8242	8243	8244	8245
Larabee	18750 254	8	8439	8440	8441	8442	8443	8444	8445
Larabee	19450 258	8	8639	8640	8641	8642	8643	8644	8645
Larabee	20150 262	8	8839	8840	8841	8842	8843	8844	8845
Larabee	20850 266	8	9039	9040	9041	9042	9043	9044	9045
Larabee	21550 270	8	9239	9240	9241	9242	9243	9244	9245
Larabee	22250 274	8	9439	9440	9441	9442	9443	9444	9445
Larabee	22950 278	8	9639	9640	9641	9642	9643	9644	9645
Larabee	23650 282	8	9839	9840	9841	9842	9843	9844	9845
Larabee	24350 286	8	10039	10040	10041	10042	10043	10044	10045
Larabee	25050 290	8	10239	10240	10241	10242	10243	10244	10245
Larabee	25750 294	8	10439	10440	10441	10442	10443	10444	10445
Larabee	26450 298	8	10639	10640	10641	10642	10643	10644	10645
Larabee	27150 302	8	10839	10840	10841	10842	10843	10844	10845
Larabee	27850 306	8	11039	11040	11041	11042	11043	11044	11045
Larabee	28550 310	8	11239	11240	11241	11242	11243	11244	11245
Larabee	29250 314	8	11439	11440	11441	11442	11443	11444	11445
Larabee	29950 318	8	11639	11640	11641	11642	11643	11644	11645
Larabee	30650 322	8	11839	11840	11841	11842	11843	11844	11845
Larabee	31350 326	8	12039	12040	12041	12042	12043	12044	12045
Larabee	32050 330	8	12239	12240	12241	12242	12243	12244	12245
Larabee	32750 334	8	12439	12440	12441	12442	12443	12444	12445
Larabee	33450 338	8	12639	12640	12641	12642	12643	12644	12645
Larabee	34150 342	8	12839	12840	12841	12842	12843	12844	12845
Larabee	34850 346	8	13039	13040	13041	13042	13043	13044	13045
Larabee	35550 350	8	13239	13240	13241	13242	13243	13244	13245
Larabee	36250 354	8	13439	13440	13441	13442	13443	13444	13445
Larabee	36950 358	8	13639	13640	13641	13642	13643	13644	13645
Larabee	37650 362	8	13839	13840	13841	13842	13843	13844	13845
Larabee	38350 366	8	14039	14040	14041	14042	14043	14044	14045
Larabee	39050 370	8	14239	14240	14241	14242	14243	14244	14245
Larabee	39750 374	8	14439	14440	14441	14442	14443	14444	14445
Larabee	40450 378	8	14639	14640	14641	14642	14643	14644	14645
Larabee	41150 382	8	14839	14840	14841	14842	14843	14844	14845
Larabee	41850 386	8	15039	15040	15041	15042	15043	15044	15045
Larabee	42550 390	8	15239	15240	15241	15242	15243	15244	15245
Larabee	43250 394	8	15439	15440	15441	15442	15443	15444	15445
Larabee	43950 398	8	15639	15640	15641	15642	15643	15644	15645
Larabee	44650 402	8	15839	15840	15841	15842	15843	15844	15845
Larabee	45350 406	8	16039	16040	16041	16042	16043	16044	16045
Larabee	46050 410	8	16239	16240	16241	16242	16243	16244	16245
Larabee	46750 414	8	16439	16440	16441	16442	16443	16444	16445
Larabee	47450 418	8	16639	16640	16641	16642	16643	16644	16645
Larabee	48150 422	8	16839	16840	16841	16842	16843	16844	16845
Larabee	48850 426	8	17039	17040	17041	17042	17043		



Name and Model	Tons Capacity	Tires			Motor										Transmission										Brakes						
		Wheelbase in Inches			Make Engine	No. of Crankshaft Bearings	Cylinders Bore and Stroke	S. A. E. H.p.	Valves Placed	Ignition		Electric System Type and Make	Governor		Speed	Fuel Sys.		Clutch		Gearset			Universal, Make	Final Drive			Propulsion Taken By	Torque Taken By	Hand Brake	Foot Brake	Steering Gear
		Kind	Front	Rear						Make	Spark Advance		Type	Type		Drive	Make	Motor in r.p.m.	Truck in m.p.h.	Carburetor Make	Fuel Location	Type									
Menominee.	H	1775	130	s.	34x33	34x5	22.5	4	1	p.s.	Eismn.	h.	cont.	d-shft.	Pierce.	900	20	Stmng.	g.s.	B-Lipe.	B-Lipe.	select unit-m.	select unit-m.	worm.	rad-rd.	spgrs.	int-t-w	int-t-w	Gumr.		
Menominee.	H	2290	144	s.	36x33	36x5	22.5	4	1	p.s.	Eismn.	h.	cont.	d-shft.	Pierce.	800	15	Stmng.	g.s.	B-Lipe.	B-Lipe.	select unit-m.	select unit-m.	worm.	rad-rd.	spgrs.	int-t-w	int-t-w	Gumr.		
Menominee.	G	2715	144	s.	36x34	36x6	27.2	4	1	p.s.	Eismn.	h.	cont.	d-shft.	Pierce.	800	15	Stmng.	g.s.	B-Lipe.	B-Lipe.	select unit-m.	select unit-m.	worm.	rad-rd.	spgrs.	int-t-w	int-t-w	Gumr.		
Menominee.	G	3380	180	s.	36x35	36x6	32.4	2	1	p.s.	Eismn.	h.	cont.	d-shft.	Pierce.	750	12	Stmng.	g.s.	B-Lipe.	B-Lipe.	select unit-m.	select unit-m.	worm.	rad-rd.	spgrs.	int-t-w	int-t-w	Gumr.		
Menominee.	J	4540	180	s.	36x36	40x6	32.4	2	1	p.s.	Eismn.	h.	cont.	d-shft.	Pierce.	750	12	Stmng.	g.s.	B-Lipe.	B-Lipe.	select unit-m.	select unit-m.	worm.	rad-rd.	spgrs.	int-t-w	int-t-w	Gumr.		
Modern.	30	1500	120	s.	34x33	34x5	22.5	4	1	p.s.	Eismn.	h.	cont.	d-shft.	Pierce.	1200	19	Stmng.	g.s.	B-Lipe.	B-Lipe.	select unit-m.	select unit-m.	worm.	rad-rd.	spgrs.	int-t-w	int-t-w	Ross.		
Moreland.	17-N	2175	126	s.	34x33	34x4	22.5	4	1	p.s.	Eismn.	h.	cont.	d-shft.	Pierce.	1200	19	Stmng.	g.s.	B-Lipe.	B-Lipe.	select unit-m.	select unit-m.	worm.	rad-rd.	spgrs.	int-t-w	int-t-w	Ross.		
Moreland.	17-N	2930	126	s.	36x33	36x5	27.2	4	1	p.s.	Eismn.	h.	cont.	d-shft.	Pierce.	1000	16	Stmng.	g.s.	B-Lipe.	B-Lipe.	select unit-m.	select unit-m.	worm.	rad-rd.	spgrs.	int-t-w	int-t-w	Ross.		
Moreland.	17-C	3250	144	s.	36x34	36x6	32.4	2	1	p.s.	Eismn.	h.	cont.	d-shft.	Pierce.	1000	16	Stmng.	g.s.	B-Lipe.	B-Lipe.	select unit-m.	select unit-m.	worm.	rad-rd.	spgrs.	int-t-w	int-t-w	Ross.		
Moreland.	17-C	3500	144	s.	36x34	36x6	32.4	2	1	p.s.	Eismn.	h.	cont.	d-shft.	Pierce.	1000	16	Stmng.	g.s.	B-Lipe.	B-Lipe.	select unit-m.	select unit-m.	worm.	rad-rd.	spgrs.	int-t-w	int-t-w	Ross.		
Moreland.	17-G	4500	182	s.	36x35	40x5	36.1	2	1	p.s.	Eismn.	h.	cont.	d-shft.	Pierce.	1000	16	Stmng.	g.s.	B-Lipe.	B-Lipe.	select unit-m.	select unit-m.	worm.	rad-rd.	spgrs.	int-t-w	int-t-w	Ross.		
Moreland.	17-G	4500	182	s.	36x35	40x5	36.1	2	1	p.s.	Eismn.	h.	cont.	d-shft.	Pierce.	1000	16	Stmng.	g.s.	B-Lipe.	B-Lipe.	select unit-m.	select unit-m.	worm.	rad-rd.	spgrs.	int-t-w	int-t-w	Ross.		
Moreland.	17-J	5000	180	s.	36x36	40x6	36.1	2	1	p.s.	Eismn.	h.	cont.	d-shft.	Pierce.	1000	16	Stmng.	g.s.	B-Lipe.	B-Lipe.	select unit-m.	select unit-m.	worm.	rad-rd.	spgrs.	int-t-w	int-t-w	Ross.		
Moreland.	17-J	5000	180	s.	36x36	40x6	36.1	2	1	p.s.	Eismn.	h.	cont.	d-shft.	Pierce.	1000	16	Stmng.	g.s.	B-Lipe.	B-Lipe.	select unit-m.	select unit-m.	worm.	rad-rd.	spgrs.	int-t-w	int-t-w	Ross.		
Moreland.	17-J	5000	180	s.	36x36	40x6	36.1	2	1	p.s.	Eismn.	h.	cont.	d-shft.	Pierce.	1000	16	Stmng.	g.s.	B-Lipe.	B-Lipe.	select unit-m.	select unit-m.	worm.	rad-rd.	spgrs.	int-t-w	int-t-w	Ross.		
Moreland.	17-J	5000	180	s.	36x36	40x6	36.1	2	1	p.s.	Eismn.	h.	cont.	d-shft.	Pierce.	1000	16	Stmng.	g.s.	B-Lipe.	B-Lipe.	select unit-m.	select unit-m.	worm.	rad-rd.	spgrs.	int-t-w	int-t-w	Ross.		
Moreland.	17-J	5000	180	s.	36x36	4																									



Rep.	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	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Paying Truck Salesmen in this Issue

# MOTOR WORLD

for  
DEALERS, JOBBERS AND GARAGEMEN

Volume LVI  
No. 2PUBLISHED WEEKLY  
NEW YORK, JULY 10, 1918Ten cents a copy  
Two dollars a year


**Champion**  
Dependable Spark Plugs

**Big Increase in  
Porcelain Efficiency**

**Three Times the Resistance to  
Breakage from Sudden  
Change in Temperature**

THREE THOUSAND four hundred and forty-nine experiments, ten years of unremitting laboratory work—and then came the startling results of—

*Experiment 3450*

Now you may be virtually certain that the porcelain insulator of Champion Spark Plugs will never break from sudden change in temperature.

Champion Porcelains have always stood up well under temperature changes.

But Champion 3450 Porcelain has three times the resistance to extreme temperature variation compared with the best previous porcelain.

Always Dependable, Champions are now Super-Dependable. Sell Champions.

Champion Spark Plug Company  
Toledo, Ohio





# THE THREE DOMINANT ACCESSORIES OF THE SEASON



## UTILITY SURE-GRIP PEDALS FOR FORDS

**Price Only \$1.00** PER PAIR

Transforms the small, smooth Clutch and Brake Ford pedals into standard size, comfortable pedals. The driver's foot absolutely cannot slip off the pedal. The heavy rubber pad and flange at the side prevent all possibility of a slip, even in rainy weather when the shoes are wet.

The Utility Sure-Grip Pedals also serve to easily distinguish the clutch and brake pedals from the reverse.

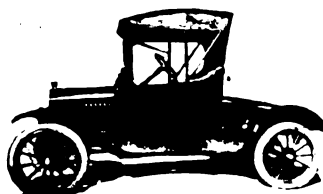
### One Dollar Prevents Accidents

By installing these pedals on Fords, drivers can absolutely prevent accidents due to the foot slipping off the pedal.

In crowded traffic a slip of the foot may mean jamming into a street car or the car ahead. One dollar will prevent this.

These pedals can be attached instantly—no holes to drill—no special tools required—one nut to tighten and the job is done. Made of high grade pressed steel beautifully finished in black baked enamel.

Absolutely guaranteed.



2 SECONDS AGO



AND NOW

## UTILITY DISAPPEARING TRUCK FOR FORDS

**Price \$32.50**

Once the Utility Disappearing Truck is installed it requires only 2 seconds to change from a Ford roadster to a half-ton truck. The truck is completely out of sight, telescoped under the *original* turtle back of the Ford. The car is not disfigured in any way—it looks just as it always did, with no hints of the truck when it is not in use.

### Hauls Any Half Ton Load

Can be completely installed by *anyone* with a hammer and wrench in one hour. Only four bolts used in attaching it. No rattle—no vibration. Will haul any load up to a half ton.

Made of heavy gauge steel, finished in black baked enamel to match finish of car. Can be pulled out to the desired length. No bolts or rivets are used in its construction. It is acetylene welded throughout.

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# MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

PUBLISHED EVERY WEDNESDAY BY

## The Class Journal Co.

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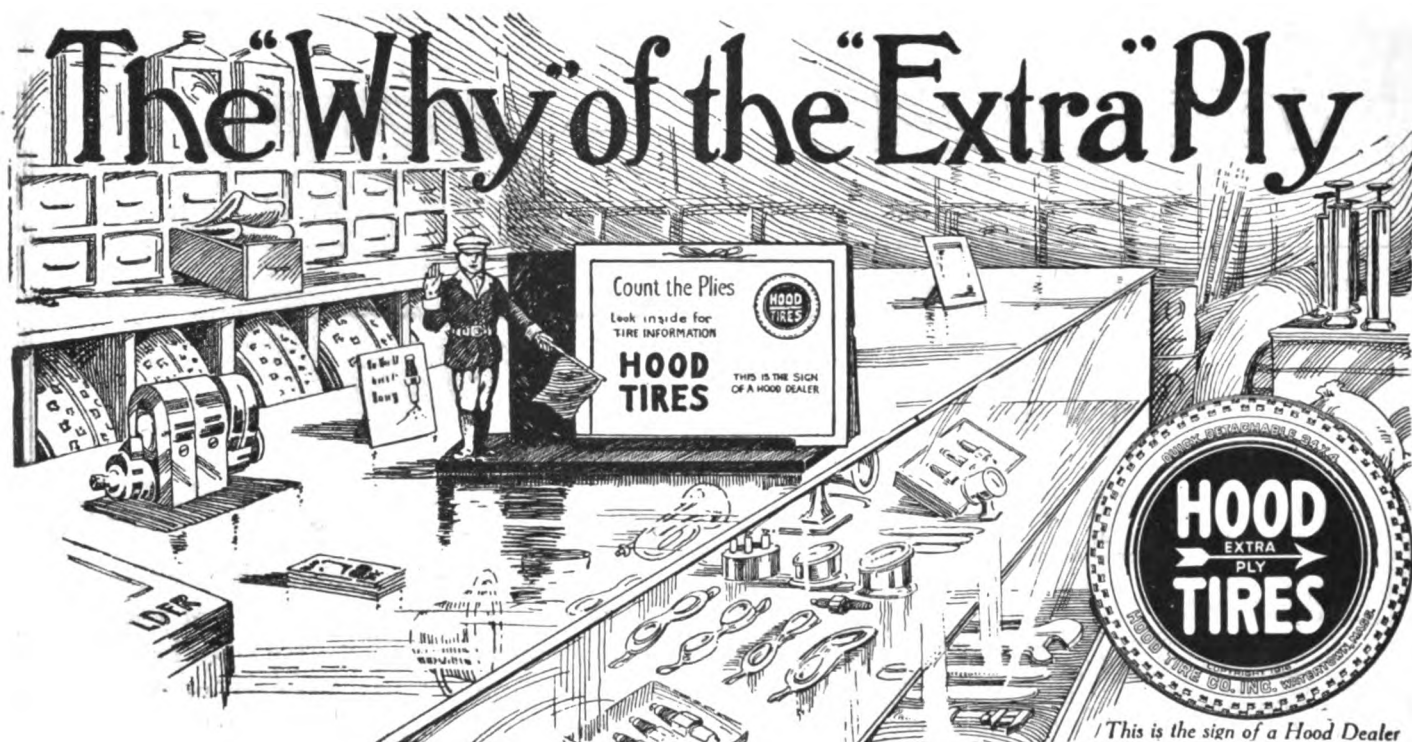
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# MOTOR WORLD

for  
DEALERS, JOBBERS AND GARAGEMEN

Vol. LVI

New York, U. S. A., Wednesday, July 10, 1918

No. 2

## Reserves!



*Coming—and they mean business*

# National Automobile Dealers' Association

*Seems Assured of*

## 5000 MEMBERS IN 90 DAYS

*Leading Cities and Large Distributing  
Territories Lend Their Support*

**T**HE membership campaign of the National Automobile Dealers' Association—which aims at 5000 members in 90 days—has assumed a momentum which should bring success in less than the allotted time.

From every corner of the United States is coming support for the organization which, while less than a good year old, has done things for the automotive trade that could never have been accomplished through any other medium.

While President F. W. A. Vesper and the directors of the organization remain in close touch with affairs at Washington and in numerous localities where watchfulness is needed, they, with the assistance of the new executive secretary, E. E. Peake, are rolling up a support for the movement that is gratifying.

The one striking aspect of the situation is that there seems to be no opposition. There is no opposition within the trade. Everybody is for it. Furthermore, once the story is told there is hardly a dealer thus far who has declined to assist the cause with his membership and \$15.

### Strong Membership Needed

The officers of the organization feel the need of a strong membership in acting for the dealers in legislative and other matters that are impending during the fall months, and want to get all set by September—and if possible early in August.

The organization, mostly through its officers, has done great work thus far, but the work done has been out of proportion to the size of the association. In order for the work to be continued the officers and present membership must have the backing of thousands of other dealers, whose fight is being fought by the few.

On page 5 of this issue of Motor World

is a cartoon which shows President Vesper holding back the forces of Rumor and Menace, which have done and are doing great damage to the industry and trade. Vesper and the other officers must have strong support and great "reserves" if they are to hold the line and push it back.

The caliber of the movement is indicated by the character of the support that is being received. New York, the country's greatest city, was among the first to give its support to the movement. At the New York meeting 125 dealers from New York, Brooklyn, the Bronx and the surrounding country joined. An error in the table last week in Motor World stated that the number was 25; it was 125.

Before that Pittsburgh and Harrisburg had rallied to the standard. July 2 Philadelphia joined. The Quaker City is putting the war conservation measures into effect through the efforts of President A. E. Maltby, who is one of the Washington representatives of the association.

### Campaign in the West

This week the campaign moves to the West. The first meeting on the schedule is Cleveland, where yesterday, Tuesday, July 9, a rousing meeting was held. The northern Ohio dealers rallied to the support of the N. A. D. A.

To-day, Wednesday, July 10, a meeting of all the dealers in Indiana is scheduled for 2 o'clock in Indianapolis at the Claypool. Invitations were sent to 1032 Indiana dealers, and it is expected that at least 500 will attend.

Friday, July 12, it is anticipated that nearly 1000 dealers will gather in Minneapolis for a convention of the dealers of Minnesota and the two Dakotas. Local sessions have been held in some of the Northwestern towns preliminary to the big meeting in Minneapolis.

A meeting is scheduled for Buffalo July 23 and Newark, N. J., July 24, after which it is expected the campaign will be active for several days again in the East.

Saturday, July 13, a meeting will be held in Fort Dodge, Iowa, where the local dealers have nearly all joined the National already and the dealers from

the surrounding territory are coming in for a big meeting.

The association is making itself felt. In St. Louis those who acted a bit offish regarding the war service recommendations of the association were brought to time through the efforts of Robert E. Lee, secretary of the St. Louis trade organizations.

### Manufacturers Co-operating

President Vesper has secured the co-operation of several manufacturers of national scope, and their local branches are being directed to co-operate with the various local dealer associations in war conservation work.

In Milwaukee one tire agency has declined to co-operate, but it is expected the situation will be amicably ironed out within a few days.

How the dealer feels who attends an N. A. D. A. gathering and hears the story for the first time is disclosed in a letter to Motor World from William A. Rutz, who handles the White, Buick and Peerless in New Haven, Conn., and is one of the active association men in that city. He says:

"With a lot of other enthusiastic automobile dealers I went to the National Automobile Dealers' Association meeting at Reisenweber's, New York, Monday (July 1), and heard Mr. Vesper's very interesting talk.

"I thought it might interest you to know that when Mr. Peake finished speaking we were one of the first to sign an application blank and join this association.

"We have often felt that there ought to be a national association and wondered why some of the dealers in the bigger cities didn't get one going.

### The Dealer's Duty

"We have studied carefully all the economy suggestions which Mr. Vesper made at this meeting, and we find that the only change we have to make in the present order of things is to close our service station Sunday mornings. During the past year we have anticipated and put into effect all the other suggestions.

"It seems to me that every automobile

## *What Is Doing in the Membership Campaign of the* **National Automobile Dealers' Association**

*To arrange meeting, correspond with association  
headquarters, 3550 Lindell Boulevard, St. Louis*

### Meetings This Week

Cleveland (Northern Ohio) .....	July 9
Indianapolis (All Indiana) .....	July 10
Minneapolis (Minnesota and Dakotas) .....	July 12
Fort Dodge, Iowa (Northern Iowa) .....	July 13

### Next Week and Later

Buffalo (Western New York) .....	July 23
Newark (All New Jersey) .....	July 24

### Meetings Held Previously

Pittsburgh (Western Pennsylvania), 208 members joined .....	June 27
Harrisburg (Central Pennsylvania), 40 members joined .....	June 28
New York (Metropolitan territory), 125 members joined .....	July 1
Philadelphia (Eastern Pennsylvania), 100 members joined .....	July 2

In addition, many individual memberships have been received through the mails, which procedure is earnestly recommended by President Vesper and Executive Secretary Peake.

dealer in the country ought to get on the job right away quick and send in his application with his check, because there is plenty of evidence that the National Automobile Dealers' Association has already accomplished a great deal and with the help of all the dealers will accomplish a great deal more and put the retail automobile business before the American public in its proper light.

"There is going to be an endeavor made to get a new association going here in New Haven, and get the local dealers to join the national association as well as follow out the war economy suggestions."

What Rutz says is a good summary of the situation. The dealer who asks: "What do I get for my \$15?" is asking a short-sighted question. The association has already given him more than that much service and until now hasn't even asked him to become a member. Now it asks for his membership in order that GREATER things may be done.

And there is one other mighty important point that Rutz makes, perhaps unknowingly, that is that alliance with the N. A. D. A. can work wonders for a local association that hasn't been showing a great amount of speed.

There are city associations in some

of America's best cities that are almost dead because they have nothing to live for. They have been mere shells with no substance inside. Some of them hold shows once a year and then go back to sleep. They are about as dead as an association can be and not be buried.

#### Joined the Local

Following the mass meeting in Pittsburgh several Pittsburgh dealers who did not belong to the local association looked up Secretary John J. Bell and said they wanted to join the local association.

Following the New York meeting the same thing happened. In New York there were dealers who said a meeting couldn't be held, because the dealers didn't take any interest in local trade affairs. Folks said there hadn't been a successful meeting of the New York dealers in fourteen years. But despite this fact two hundred from New York and vicinity turned out and more than half of them affiliated with the N. A. D. A.—and several local men afterward said they wanted to belong to the New York City association.

These meetings are a wonderful thing to stir up the trade in any section. The story Vesper tells shows the trade what it amounts to and how it must become

alive and active if it is to save itself from conditions that may arise. Having made this start, it is up to the officers of every local association to keep the ball rolling and to see that the local association gets behind some of those real, active movements that are needed in every locality.

Many of these dormant associations have become so because they have not had "missions in life" and because the members have not been guided into taking part in the work. The result has been that the association has become mostly an office with a secretary or manager and everyone has become imbued with the belief that "George" would do it.

Of course, President Vesper and Executive Secretary Peake can be in only a certain number of places at one time, but every city which wants to have its local life stimulated and which wants to take part in that work that is being done for the dealers generally would do well to arrange for a mass meeting. It has proven worth while in every instance thus far.

Furthermore—is there any dealer who is willing to see several thousand other dealers safeguarding his interests while

(Continued on page 47)



## Do You Pay

# Repeat Commissions to Truck Salesmen?

---

Truck sales often mean big fleet orders. These commissions run into big money. Here is one dealer who pays repeat commissions and tells why. He says it binds the salesman to the house, decreases labor turnover and increases sales efficiency. This dealer is one of the biggest and best truck dealers in America.

---

**W**HEN a truck owner telephones in to the truck dealer's office and says: "Send me over another truck," who gets the commission—

The house?

The salesman who received the telephone call?

The salesman who sold the first truck?

Or is it split?

Probably these questions have bothered many a truck dealer. Probably various solutions have been tried, and probably some have failed.

But the H. A. Dougherty Motor Co., which retails and wholesales the Republic in Kansas City and the Southwest, has tried paying all of the repeat order commission to the salesman who sold the first truck and finds that its business is growing enormously, no matter what the reason. It is, however, disposed to accept this plan as part of its success.

### The Thing That Holds Him

Can't you imagine a salesman who has been selling trucks for Dougherty considering going to a new job. The new job may look fine, but he scratches his head before he quits and ruminates thus: "Gee! What about all these repeat order commissions I'll get if I stay here?"

And he doesn't jump from job to job like a butterfly. The most of the Dougherty salesmen who quit are those who leave to accept executive positions. As far as ordinary sales positions are concerned they hate to leave that little old repeat commission thing, for they never can tell who will slip them a day's work over the telephone while they are out pounding the pavement on a hot day.

The result is that the longer a salesman stays the better his job becomes.

He becomes more tightly bound to the dealer. He gets closer and closer to his customers, and the Dougherty company gets a tighter and tighter grip on the truck buying business men of the metropolis of the Southwest.

"In the first place," states Harry M. Gemung, manager of the Dougherty business, "it is my opinion that there is only one way to work salesmen, and that is on a commission basis, as the right kind of salesman is anxious to make his earnings as great as possible, and I believe that a commission on each sale will give the salesman an added incentive to keep on working as hard as possible clear through the entire month.

### Good Business Policy

"I believe that from a business standpoint and also from the standpoint of the salesman it is proper and advisable to allow the salesman a commission on repeat orders in every instance. In the first place, we are anxious to sell as many trucks as possible, and at the present time we are selling nearly as many trucks to our owners as through any other source. The fact that we have at the present time forty-nine owners operating 165 Republic trucks in Kansas City goes to prove that this repeat business is valuable and should be looked after very closely.

### Keeps Up Interest

"If we did not pay the salesman a commission on repeat orders he would have no interest whatever in calling on the parties whom he had sold. The natural tendency of all business concerns at the present time is to grow, and our customers are constantly adding new equipment and replacing their worn-out equipment, which makes an ever increasing demand for trucks.

"We require that our salesman call on his customers whom he has sold at least once a month, and if our records do not show that he has called on his customers

as required, these customers will be given to some other salesman.

"By calling on the customers the salesman keeps in constant touch with them and on a friendly basis. He is in a position to take up any matters of dissatisfaction regarding service, repairs or other matters which might cause us to lose a customer if not taken up at the proper time and adjusted.

### Keeps Owners Satisfied

"Our first thought, of course, is to sell as many trucks as possible, and the old saying, 'a satisfied customer is the best advertisement,' applies to the truck business to an even greater extent than in most any other line.

"We have found that where we can refer to business concerns which have purchased two or more Republic trucks it is a wonderful help in making a sale to a new owner, and we regard this repeat business as being the most valuable business we can have.

"Another point is this, if the salesman calls on the customer regularly and keeps on a friendly basis with him, the customer will naturally tell him about inquiries he has regarding his experience with Republic trucks and conversations he has had with other merchants, and in that way the salesman will obtain many new prospects and get great assistance in making new sales.

"It is only natural that a salesman will not call on the owner unless there is something in it for the salesman, and if we want this business attended to we feel that we must give the salesman a commission on his repeat orders, as that is the only way you can depend upon the salesman to attend to these matters properly.

### How It Works

"To give a specific instance of how this proposition has worked out, a salesman personally called on J. C. Fisher, 302 Kansas Avenue, in October, 1916,

and after several calls was able to sell him a 1-ton Republic truck. A short time afterwards Mr. Fisher called by phone and told the salesman about his brothers who are in the grocery business, doing business under the name of Fisher Bros. He stated they might be interested in buying a truck. The salesman sold them a truck. Afterwards, while the salesman was making a call on Mr. Fisher, he told about the J. L. Bridges Creamery Co. and the salesman sold them a truck. Mr. Fisher has given us many prospects and since the time we sold him his first truck he has purchased four more Republic trucks.

#### When a Man Quits

"Some time past our custom was, when a salesman left the employ of the company the customers that he had sold were considered house accounts, and the repeat business on those accounts carried no commission to any one.

"To show you how this worked out: The Standard Paper & Woodenware Co. owned a Republic truck, and the salesman who had made the sale had left the employ of the company. These people were not being called upon or given any attention and it happened they were in the market for a truck. They felt slighted that we were not calling on them and looking after their business, and the salesman for a rival truck company happened to strike them at just the psychological moment. To make a long story short, the rival company sold them a truck.

"The Standard Paper & Woodenware Co. have told me they regretted having purchased this truck, but this goes to show the business can be very easily lost if it is not looked after.

"We now have a system in effect whereby all of the customers are given

### How Do You Do It?

*Dealers, jobbers, manufacturers, everybody—how do you handle the commissions of your salesmen?*

*Do your men get commissions on business that is developed by their missionary work? If so, why and how much? If not, why not?*

*Who knows but that there are as many different methods as there are companies?*

*Tell us how you do it.*

*Maybe YOUR method is what thousands of others have been trying to work out for years.*

to the salesmen, and when a salesman leaves our employ his customers are divided up among the remaining salesmen by lot. This proposition of paying the salesman a commission on all repeat business puts him in a position where he can work up a clientele similar to the renewals in an insurance business, and the salesman's earnings increase in proportion to the length of time of his employment, and this tends very greatly to make the salesman's employment a permanent one, as a salesman can scarcely afford to leave our employ for a similar position. As a matter of fact, about the only ones we lose are those who leave our employ to accept positions as managers of other institutions.

"This is a very important item, as it is an expensive proposition to teach a salesman the truck business, and it would be a losing business if we had them constantly changing their employment.

"The salesmen employed by this firm are in the habit of making good money.

We have no time for a truck salesman who can't earn, at least, \$250 per month, and we have had several salesmen earn in commissions over \$1,000 in a month.

#### Big Future Ahead

"I believe that the proposition of selling trucks is one of the best sales propositions obtainable to-day, as the problem of merchandise transportation is a serious one and must be met in all lines of business. The conceded inefficiency of horse-drawn vehicles, together with the shortage of men, has brought matters to such a point that any business house which wishes to give good service to its customers must motorize.

"We find that most of the merchants are glad at any time to discuss matters pertaining to trucks and the transportation end of their business, and we find that the more a truck salesman specializes in his particular line of work and the nearer he can approach being a transportation engineer the more good he will do."

## Trucks Help Missouri Dairy Farmers

KANSAS CITY, July 8—Dairying is becoming more general and more profitable in northern Missouri because the milk and the products can be transported reliably and quickly over the dirt roads by motor truck.

Within the last year there has been a marked increase in dairying—and in every instance where a new creamery has been established, or a new station for the handling of milk, motor trucks are making the collections, and are delivering to retailers in other towns at least a substantial share of the products.

Cameron, Mo., is a good example. Cameron in the past year has increased several fold its milk production. The Missouri Dairy Co. of Kansas City collects milk here—brought in largely by small trucks, whose owners have their own routes. The dairy company ships milk to Kansas City by train. It delivers ice cream to surrounding towns by truck.

M. P. Rutledge & Co., Chicago produce merchants, have had a station at Cameron several years; their business is increasing markedly since the produce has been brought in by trucks. This company put into operation June 1, at Cameron, a creamery—since milk could be depended upon, brought by truck. The butter is shipped to Chicago. At present farmers come to the creamery for buttermilk to feed to stock; one of the truck-route men is commencing to build a business in carrying buttermilk back to the farmers along his route, a return load that is nearly all "velvet."

#### Interurban Electrics Stimulating Business

There has been much encouragement of dairying in Missouri the past two or three years. An important work has been done by interurban electric lines to build up their freight business—with calf clubs, financing of boys who want

to raise dairy cows, and educational propaganda among farmers. Interurbans find themselves now overwhelmed with freight business—and the dairy idea has spread wonderfully.

In many of the districts where dairying is increasing the railroad facilities have never been good. In many sections trucks are helping the development of dairying where there are no railroads. As a result, the value of the land is increasing, the profits are growing and the desirability of living on those farms is greater.

So far most of the service has been by small trucks—small passenger cars converted into trucks. These are not equipped to handle much larger bulk than the boxes of milk bottles, or the coops in which chickens were brought to town. The need, so far as fullest development of truck service is concerned, is apparently for the use of larger trucks, so that return loads can be carried.

## *Motor Car Dealers*

# Put the Tractor Over for Uncle Sam

*In Nation's Great Food Emergency Official Trials at Distribution  
Failed and Motor Car Men Stepped Into Breach and  
Carried Tractors to Farmers at No Profit*

THE impression prevails in many quarters that the success which has attended the distribution of Fordson tractors in so many of the states of the Union during the last three months has been due in the *largest* measure to state endorsement or state participation in the distribution.

This is a mistake. As a matter of fact, the distribution was undertaken by the state in only one instance, and in this the state made a comparative failure of it. Reference is had to Michigan, to which state the first allotment of 1000 Fordson tractors was made and which inaugurated the movement which since that time has spread so extensively through other states.

In all other instances the distribution was undertaken by regularly appointed automobile distributors, and it is these men who put it over through the activity and co-operation of local dealers. In Michigan supreme reliance was placed upon a patriotic motive, the distribution being undertaken by the State War Preparedness Board, local county chairman or county agricultural agents being relied upon for the ultimate distribution. The state board had no adequate business organization nor any business connections competent to handle such a purely commercial transaction as the sale and distribution of 1000 tractors within the period of one month. On the other hand, subsequent state distributions were in the hands of trained business men who had a comprehensive conception of the difficulties which likely would be encountered, who knew how to meet them effectively, and who at the same time could appeal for assistance to a local distributing agency which already was in existence and which was accustomed to meeting just such problems as those the tractor distribution brought to it.

*This readily explains the comparative failure of the distribution in Michigan and accounts for the phenomenal success*

*which attended state distributions elsewhere through regular trade channels.*

But, even so, success hardly could have been attained anywhere in equal measure had it not been for influential factors commonly absent from commercial transactions of the magnitude and nature of the state distributions of Fordson tractors. These factors were, but not necessarily in the order of their importance:

Patriotism.

State approval, active or tacit.

Henry Ford, his personality and standing with the farmers of the country.

The character and ability of the state distributors.

The character, ability and disinterestedness of the local distributors.

### The Patriotic Motive

First, as to the patriotic motive: Much has been made of the sentiment of patriotism behind the increased production of tractors and their immediate employment on the farms of the country in order that the food products of the country's acres might be increased. This has been put up to the tractor manufacturer as a duty he owed his country and that under the circumstances it was incumbent upon him to exert himself to the utmost of his productive capacity.

Most of them have responded to the best of their ability, but comparatively few were fortunate in having a production large enough to undertake distribution on a large scale or to consider any plan of distribution other than the usual one of selling through their regularly constituted agents. For this reason the patriotic appeal rather failed of its effect, generally speaking.

### Business Training Needed

Impetus was given the patriotic movement, however, when announcement was made by Henry Ford that his production at the Dearborn factory was such that it would be possible for him to make state allotments of tractors in numbers

as large as a thousand to a state, provided they could be immediately distributed to the farmers at the factory price. This proposition first was put up to Michigan, and was eagerly accepted by the state government, which placed the state distribution in the hands of the War Preparedness Board as previously stated, and with results as already given. That the plan succeeded only in part in Michigan was because the patriotism of the farmers could not altogether make up for a lack of business organization in the distribution.

Exactly the same sentiment has been appealed to in every subsequent state distribution, but in each case it has been supplemented by business organization, and for that reason has been more successful. Aside from the effect the patriotic motive may have had upon the farmers in inducing them to buy tractors even in the off season, its most significant and important effect has been to induce dealers to undertake the financing and distribution of the tractors themselves without the hope of immediate individual profit.

*It is doubtful if even motor car dealers could have been induced to do this unless their patriotism had been aroused, hence to this sentiment must be attributed a large share of credit for the success which has been attained.*

### State Sanction Helped

This same sentiment accounts also for such recognition, approval or sanction as has been accorded the plan in the several states by the respective state governments. As stated before, active participation was confined to one state alone—Michigan. The results there were very unsatisfactory and disappointing. In some of the other states more or less sanction and encouragement have been given by the state government. In some no official cognizance has been taken of the matter whatsoever. However, state distributors have shrewdly seized upon



every atom of recognition or encouragement and upon every indication of state approval and have used it everywhere for all it has been worth.

Probably it is this fact that has occasioned the widespread impression that state encouragement and assistance were given everywhere. It is not improbable, indeed, that what was intended to be a mere tacit recognition of the service the state distributor was planning to do has been magnified by the latter into an expression of active approval. This has resulted here and there in placing the state government in rather an embarrassing position.

However this may be, the impression is general that state distribution has received state sanction and approval, and that this has had an appreciable effect in making state distributions successful.

#### Ford's Standing Helped

The estimation which farmers in general entertain regarding Ford as a man, and admiration among the same element for his manufacturing and merchandising abilities, constitute a factor of tremendous influence. For a number of years there has been persistent rumor that Ford was about to produce a low-priced, practicable tractor, and farmers all over the country have been agog to welcome it.

As soon, therefore, as announcement was made that the long-expected tractor was ready for distribution at a factory price and that it was available in large numbers, farmers literally fell over themselves to get one. Irrespective of the fact that the price as announced was higher than most had expected it to be; irrespective of the fact that the Fordson tractor was an untried quantity as far as its effectiveness was concerned, the farmer, individually and collectively, was predisposed to accept it on faith and to buy it on sight and unseen. This was just because it was made and vouched for by Henry Ford.

#### Character of Men a Factor

The character of the men who have been chosen to act as state distributors is still another powerful factor. The very manner of their choice establishes this fact. The state agency was not offered to them. The man who got it went after it—and manifested his fitness for the post by doing so. He demonstrated that he had the foresight to see an opportunity and to seize it. He gave promise also by the same act that he had the ability to make the most of that opportunity. Thus the test for fitness in the ranks of state distributors was the promptness displayed in getting on the job under the profitless conditions imposed, supplemented by the applicant's previous record as a successful distributor of the Ford car. This method of selection insured loyal co-operation, energetic action and willingness to undertake a big task without hope of compensation, save as the future might promise recompense. The result has been that the selection in every state has fallen upon men competent to do big things

in a big way and who are accustomed to meeting success in everything they undertake.

Practically the same plan of selection for local distributors has been followed. The state distributor announced the plan of profitless local distribution to all of the Ford dealers in his state; appealed to their patriotism and pointed out the future possibilities of the tractor trade. Those dealers who responded promptly and heartily, who pledged their co-operation and their dollars, got the appointment. This actually was a process of selection whereby the most capable and most energetic dealer in the organization got agencies.

#### The Future Will Repay

These then are the prime factors which have contributed to the success which has been attained in the attempt to distribute thousands of Fordson tractors; which has resulted in putting hundreds of motor car dealers into the tractor business, most of them doubtless permanently; which likely will result eventually in what practically will amount to a veritable revolution in the farm operative equipment business, at least as far as power farm operative equipment is concerned.

There remains but to say a few words regarding the profitless character of the Fordson distribution to date. Regarding this phase of the matter some confusion of mind exists.

Henry Ford & Son have sold every tractor which has been included in the numerous state distributions at the uniform price of \$750, f.o.b. Dearborn, Mich. This is the full factory price and as far as Henry Ford & Son are concerned not a cent of their factory profit has been sacrificed.

These same tractors have been passed along to the farmer at the same price, plus a freight, unloading or service charge which has varied from \$15 to \$25, according to the distance of the point of delivery from the factory. This means that the state distributor has not made a single cent profit on the tractors themselves, nor have the local distributors, except in so far as the latter have been able to save a few dollars here and there out of the freight or service charges.

This has been the remarkable feature of the whole distribution, and is the effect of the patriotic sentiment and of the hope that future trade will bring compensation for present profitless effort.

#### Generally No Profit

Both state distributors and dealers have made some profit on Fordson equipment, the division between the two varying according to the plan pursued in the several states. Nor is any denial of this fact made. However, the profit made on the equipment by either state distributor or local dealer has not been as great as farm operative equipment dealers are accustomed to making, nor would it have been sufficiently attractive to the old time farm operative equipment dealer to have induced him to undertake and to accom-

plish what the motor car dealers of the country have done.

The war has necessitated many emergencies. Many plans for many tasks have been tried, and sometimes not the best plan has been tried first. This sudden and widespread distribution of tractors was emergency business. The job had to be done and those back of it tried the methods they thought would be best.

The lesson which the entire course of Fordson distributions teaches is that state distribution, without the co-operation of business men who are trained to handle such matters, is very likely to fail, while the men who can accomplish such tasks successfully are proven to be the motor car dealers.

#### "Cash on the Counter"

KANSAS CITY, July 8—Kansas City motor industries and allied lines are proceeding in the conservation program on the assumption that everybody will co-operate—and that "cash" means "the money on the counter." This phrase was proposed by E. S. Cowie, president of the E. S. Cowie Electric Co., at a general conference of allied industries, and it was taken up by the majority of those present as a proper definition.

"There are a thousand definitions of 'cash,'" said J. Frank Martin, chairman. "Let's agree on ours."

It was pointed out by garagemen, tire men and others present that 30 days has usually meant cash; that many large customers will expect to pay bills monthly; that the largest customers, and some of the larger companies with which motor trades deal, have to send bills through auditors frequently to distant cities for headquarters to pass upon. Express companies and insurance companies were specifically mentioned. It was generally agreed, however, that even these companies can readjust their methods of handling local business, so that payment can be made in cash when work is done or supplies provided.

There is no disposition in Kansas City, however, to rush matters unduly. While the entire associated industry is aiming at "cash on the counter," sufficient time, it is said, will be given for necessary readjustment of systems.

#### Boston Dealers Use Women

BOSTON, July 6—The shortage of men in the Boston motor colony is leading to the introduction of women on a larger scale. At the Alvan T. Fuller place, where the Packards are sold, there are some 75 women now on the payroll, and the number is growing every week. The gasoline filling station is in charge of a woman; another is handling the checking booth, where all cars going in and out are registered; another checks the cars and trucks going into the repair department; others run the elevators, and more are in the painting, stock and other parts. Some of the other dealers are giving women the executive positions, the Republic Truck Co. having placed in charge of a woman all the details of handling the employees.

# DIVORCE *WITHOUT* ALIMONY

The Used Car Department Has Wronged the New Car Department—  
The Only Plan for Future Happiness Is Absolute Divorce  
with No Alimony—Make the Used Car  
Earn Its Own Living

**W**HEN Elizabeth gets tired of Peter and wants to make a fresh start in the world she packs her little bag and hies to the nearest and best divorce court.

She gets the knot untied just enough so she is free—but she keeps a little string on Peter through that old and well-known alimony. Thereafter she is of no assistance to Peter but he has to pay for her upkeep just the same.

Much the same thing has been the condition in the new and used car business. They have been more or less divorced in many establishments, but in a great majority of cases the new car department has been paying alimony to the used car department and has received nothing in return.

## Secret of Used Car Success

James H. Gibson, used car manager for the Overland Automobile Co., St. Louis, is no believer in alimony—and he is on the Elizabeth side of the fence, too. "The secret of used car success," he says, "is absolute divorce. Get a man who knows used cars, turn him loose and let him operate entirely independent of the new car end of the business. If he can't stand on his own feet and support himself that is his own funeral."

Gibson is one of the pioneers in successful used car departments in St. Louis. He began as a mechanic, next he was in the retail end and then he was assigned to sell used cars. He has known the used car business since it first became a problem and he is one of those who are making it less and less a problem every day.

"I can recall," he said to Motor World's representative, "when the retail salesman set the price and it was the used car man's job to sell them above that price if possible, or, if not, to cover as much of the loss, that was in no sense his fault, as possible. The whole system was so manifestly unfair that I finally took up the word against it."

"My employer and myself were standing in front of the salesroom one day when a car was driven up and the driver

got out. 'That is the car,' he said. 'What will you allow me for it?'

"'\$500,' was the reply.

"The trade was made and this car was turned over to me. It gave me the opportunity. I said to my employer, 'Do you think that was fair to me? How did you know that car was worth \$500? How did you know it would run?'

"The answer was: 'He drove it up here, didn't he?'

"'Yes, but I can drive many a car up here that no man can drive away,' I replied.

"That was the beginning and eventually my argument had effect. The retail department began to send for me to estimate difficult propositions. We did so well on these trades that finally the estimating was entirely put up to me. From that day on the used car department began to save some of the loss that had been charged to it from the retail department.

"Of late years I have had several months at a time when the used car department would show a profit. There may be a day coming in the near future when a used car department will show a profit for the year. But I have the satisfaction of knowing that the departments I have managed have come nearer breaking even than most of them."

## Retail Department Not Good Judge

Gibson is strong in the belief that the retail department can never rightly judge a used car when a trade is in sight. He says that the commission, or profit, on the new car looks so big that the old car begins to look "mighty good" when the prospect wavers. "I often tell my present employer that the less I know about the retail department the better," said Gibson.

"I have but one idea in view. That is the worth of the car as it stands. The question to me is what can I tell the customer of this car to sell it to him.

"I believe that *the successful used car man must be a mechanic*. He must know mechanics from beginning to end. When I drive a car over a few blocks and then look it over, I am in position to know pretty well what the car can do. Handling these cars is an education in itself. Suppose I pass on fifteen a day, and three

a day of these are turned in on trades. I make out a detailed report on each of the fifteen and when the cars come into my shop I have them gone over, make additional tests and then I check up with my estimate. If I overlooked anything, I find it out. I soon get to know what the extra noise or pressure means. That is what a used car estimator must know.

"The public is getting educated to the new methods of handling these cars. In the old sporting days, the car offered in exchange was valued against the profit on the sale. Now it is judged for its worth. Not long ago a man who wanted to trade an old car in on a \$1500 sale asked me, after I had passed on his car, 'What would I get if I was buying that \$2,500 car?' Exactly the same.' I answered. 'I am judging your car for what it is worth in the St. Louis market, not for any purchase you may make. I am giving to you every thing that I think we can afford to give to you, regardless of what you buy.'

"That man finally was convinced.

## Appraising by Appearance

"The most difficult proposition is the few dealers still in business who judge cars by the looks. A man with a mere shell that had good paint will drive up here to have us pass on his car. He will laugh at our estimate. He goes elsewhere and gets perhaps double what we offered. But we have the satisfaction of knowing that we did not sell him a new car at a loss, and in the course of my experience I have seen many houses fail for exactly the same thing. But most new car dealers have learned their lesson and this competition is dying."

As to published charts and other formulas, Gibson says that they have their value. He uses them entirely in estimating cars that he does not know well. He does this by taking a car of the same value that he does know and comparing its ratings with the stranger.

"The one thing that these charts cannot tell you," said Gibson, "is your local market, and of course that is your guide. For a long time St. Louis has been a very high-priced used car market. Only San Francisco has had better prices than this city, I think. But there are some cars in St. Louis that are rated far below the charts.

"For instance, the Stutz. This city is not a high-priced market for that car. As to Fords and other light cars, this market not only has been high, but it has been extremely sensitive and frequent changes have upset the prices from time to time. A used car estimator must keep these things in mind always. A lack of knowledge of the local market can break you quickly.

#### Used Car vs. New Car Market

"Then, too, the local market on used cars is entirely different from the new car market. A new car that is popular in a town will not be popular as a used car. Of course, we have our Overland dealers to fall back on for cars that do not sell in St. Louis.

"It is not unusual for one of the Overland dealers to drive a used car in here that is an excellent sale in St. Louis, and take out one of equal value to sell in his community, that we cannot move in St. Louis. These are things that the dealer must know about his territory to get the best out of it.

"Heavy used cars never have the popular demand that light cars enjoy, but it would be surprising if a person who knows this community could know the names of some of the men who buy cars of us. These are men who know a good car when they see it and who are perfectly willing to take a car that does not 'look second hand' and make a considerable saving.

"We sell a good many of the cars just as they stand to mechanics. We tell them what we think is the matter with them and let them try them out for a short time; then it is up to them."

The selling of used cars is quite another proposition from selling new cars, according to Gibson, and he has found that the best new car salesmen do not do well with used cars. Also some of the best used car salesmen are not successful with new cars.

#### Used Car Sales Specialist Needed

"The average new car salesman has an air that does not impress the used car buyer," he said. "The person who buys a used car comes into the deal in a different state of mind than the man who is buying a new car. As a rule, the prospect does not appear exactly comfortable with the new car salesman. I have never defined exactly the cause, but it is there.

"The salesroom is another different problem. In this former Overland new car salesroom we have some very fine fixtures and excellent light. I do not believe that these really are an advantage in selling. Only a few days ago the management suggested that we clean the walls and fix up a bit. My answer was that I did not think it was worth the money. I have worked in some places that were far from being good salesrooms or pleasant quarters, yet a good business was done there. The point I am making is this: I think I could sell used cars in a bar, given a proper location. And a location to sell used cars does not include all that a location to sell new cars calls

for. The used car buyers will hunt you up if hunting is not too difficult. They have gone through the mental impulse before deciding to buy. Buying a used car is seldom an impulse.

"We sell every car just as it stands, with nothing thrown in and no promise of service. We tell the buyer as honestly as we can how the car stands and we also tell them that if anything wrong develops in seven days to come in and see us.

"We do not pretend to rebuild a car. We do overhaul them and look for weak points. But labor is much too valuable now to rebuild cars that will run. When we find them fairly satisfactory on a driving test we do not believe that it is

finger on, but you know that it is true just the same."

Advertising used cars is a specialty that differs in various communities, according to Gibson.

"In St. Louis," he says, "the classified ads are the only ones that bring results. The classified columns here admit moderate display and the public looks there for the ads. There are many steady readers of these ads and these folks are the best customers. Perhaps many are traders. They often will come in and ask why we have changed the price on a certain car. They talk of these things among their neighbors and friends. In other cities, I know that display advertising pays well

### GIBSON'S USED CAR RULES

*Cars accepted on trade-ins must have side doors.*

*Every car must have a built-in starter, not an outside attachment.*

*Be honest both ways. Used car buying is a habit and the customers are fine repeaters, if you treat them right.*

*Never concern yourself with how much profit is going to be made on the new car sale. Estimate the car offered only at its worth.*

*Never believe anything good any one tells you about a used car. Go at it with both eyes open and ears well tuned.*

*In trading used cars, never trade a good seller for a poor seller. Let every trade reduce your liability as to stock.*

*When you buy a car that must go for junk, allow only the junk price and then hasten it to the junk man. Never permit it to stand around.*

*Don't speculate on futures. Make every trade on a basis of to-day's market.*

*When you are stuck, write off the loss, mark down the car and move it quickly.*

*There are only two kinds of used cars—those that will sell and those that are junk. Under present labor conditions, do not waste time on making a car out of junk.*

worth while to take them entirely apart. In my opinion the word *rebuilt* is being overworked. We paint cars when they need it, and we do much other work to make them acceptable to buyers.

"To a very large extent our stock on hand governs our willingness to accept cars. We cannot carry too much stock and we try to turn everything quickly. We sell many cars that do not belong to us. They are left here by our dealers and others.

#### Moving the "Sticker"

"My experience has been that when you get a car—as occasionally every buyer does—that is proving a sticker, the time to move it is *right then*. The price must be adjusted to the demand, the loss shouldered and the car moved or it will stand around losing value all the time. The salesmen soon lose interest in a car that is standing in the way. That is one of the things that you cannot put your

with used cars. I have tried display ads in St. Louis, but none ever appeared to me to be profitable. Paul Smith, late manager for the Overland Automobile Co. of St. Louis, was an ardent believer in display advertising. He had us use considerable space on used cars, but eventually he saw that conditions in St. Louis were different.

"But after all, my conclusion is that the last test of a used car department is its ability to bring the old customers back—a thing you cannot do unless you are on the level all of the time, both in buying and selling. The best advertising for a used car department is for your customers to tell their neighbors about you. Then they will come to us for trades, for we make a good many trades of used cars for used cars.

"Be honest in trading both ways, and if you can judge the cars fairly accurately, you can win success. But dishonesty soon will find you out."



## To Build for the Future

# Farm Lighting System

## Must Have the

# Automotive Dealer

"YOU say this outfit runs quietly when it is in proper condition?" said the prospect for a farm lighting outfit.

"Yes, it always has run quietly until this governor got out of order, and since it got out of order I have not been able to get the agency to send a man down to fix it," replied the "man who owns one."

"Isn't there anyone in town here that can fix it?"

"Well, I don't know of anybody. You see, they have no agents nearer than New York, and this part of Long Island is eighty miles out."

This conversation took place between a farmer who owned a farm lighting and power outfit and a visitor who had been sent some 80 miles from New York to see the outfit in operation because the visitor was a prospect for the sale of one of these outfits.

Almost a month had elapsed from the time the farmer had notified the agent in New York that his equipment was operating inefficiently and improperly, and up till that time nobody had been sent to take care of this farmer, *but in spite of this fact the agent had sent a number of people down to look at the plant as a sort of demonstration by a "man who owns one."*

This sort of demonstration is a demonstration that *does not demonstrate*. There are five automobile dealers in that town who, had any of them been the local agent and service man, could have fixed this man up in a very few minutes. As it was, there was no telling when a factory man could be sent to repair the outfit.

The only thing wrong with the outfit was that the spring was too weak and would not hold the governor blocks in; consequently, the engine raced and the blocks knocked and made considerable racket when the outfit was working. Any ingenious man could have fixed it.

This farmer was thoroughly satis-

fied with his outfit as far as its operation was concerned, he was getting good service for lighting his house, his wife was using an electric iron, a luxury that she had never before indulged in in her life, and the farmer contemplates putting in a deep water well pump so that he will have running water in the house.

It is absolutely necessary that the plant be maintained in efficient condition if it is to do the work which the manufacturers say it will do.

This is simply one more argument in favor of the automobile dealer being the agent for a farm lighting and power plant. Where these plants are sold by specialty salesmen or others, there is never anyone within reasonable reach who can effect minor repairs when such repairs are needed.

With the automobile dealer the situation is different. The automobile dealer has his place in the town near the farmer and the farmers have always appealed to him. The automobile dealer is fully competent to make any kind of repairs on any part of the plant unless the plant is so badly crippled that it will be necessary to send it, or part of it, back to the factory.

There is no other class of dealer that can give the same efficient and quick service to these plants that the automobile dealer is able to give.

In speaking of service, it should not be thought that a lot of free service and free repairs should be given to purchasers of plants. On the contrary, all service should be charged for after the owner has been properly instructed in the use of the plant.

Automobile owners have been spoiled to a certain extent in the matter of service and they seem to think that they are entitled to free service, inspection, lubrication and repairs whenever they need them. Do not spoil the farm lighting and power plant owners in the same way. When a man buys a plant it is only reasonable to show him how to use it, and help

him out if he gets in trouble the first few days, but there is no reason or right to continue it after that. The plants are so simple and so easily understood that any farmer should be able to learn pretty much all about them in a very short time. Then, if he needs service, charge it to him. The farmer in question was willing to pay for service—but couldn't get it.

These plants are, as a general rule, built so simply that they are almost foolproof, but at the same time there are some people who are bound to get in trouble with them, and it is then that *the reputation of the plant is in jeopardy unless there is someone available who can immediately put the plant in running condition*. Very often this is a very simple matter, sometimes being merely a carburetor adjustment, a slight adjustment to the governor, or it may be even so simple a thing as no gasoline in the tank. However, the owner is unable to discover the trouble and even the slightest thing that prevents the plant from running will condemn it in his eyes, unless it is speedily fixed.

Farm lighting and power plants are a great convenience and almost an absolute necessity on the modern farm. To keep those that are already in use running right is the greatest advertisement for the whole farm lighting and power plant industry that could possibly be imagined. The manufacturers should consider this point when naming agencies for their plants.

Furthermore, the automotive dealer who has the agency for a farm lighting plant has one of the best arguments in the world for himself. It is that of being "on the job" and ready to put things right in case anything ever should go wrong. And he is there to supply added equipment, such as flat-irons, pumps, fans, etc., in case the farmer feels the need for them. This nearness of the dealer is always a big factor with any man who is buying goods of any kind—except possibly the confirmed mail-order addict.

Readers:

## Meet GEORGE MAY FROM AUSTRALIA

He sells American cars on the other side of the world and has a lot of interesting things to say about his country and our country, cars, railroads, dealer associations, wheat, rabbits, Kaisers and other pests

**G**EORGE M. MAY, who runs May's Motor Works in Adelaide, Australia, is visiting in the United States. He is a long ways from home. It took him a month to get from Adelaide to New York.

May is a very interesting man to talk with. He has been president of the Motor Traders' Association in South Australia and has been active in organization in trade affairs there for a number of years.

He believes strongly in the need for national organization in a country like Australia, or in the United States, and hopes that some day Australia might have an association such as the dealers in America are now forming.

### Big as United States

One of the most interesting points he makes is that the ordinary American doesn't realize how big Australia is. Probably readers of Motor World aren't familiar with the fact that Australia is practically the same size as the United States. There is also one other very interesting thing, which is that if you will take a map of Australia and turn it upside down it looks a great deal like the United States in shape. In fact it looks like the map of the United States that might have been drawn by a kindergarten student.

But with all this enormous territory, the population of Australia is only about 5,000,000, and the greater portion of the population is in the eastern and southeastern parts. May is located in the southern part and distributes the Chevrolet over a very large territory. He also has the Empire. So far as getting English cars, for which he has the agency, is concerned, that is out of the question, because no English cars are being manufactured for other than war needs. He is also looking for the agency for certain accessories, tires and specialties, which he can distribute through the entire Australian territory.

He says the dealers in Australia have been having trouble since the war started, just the same as have the dealers in the

United States. One of the things the government wanted to do was to prohibit the importation of automobile bodies. Through the efforts of the dealers, among whose leaders is May, this restriction was modified until one body may be imported with every three chassis. May has a body building department, and this embargo in a way benefits him, but he would much rather see the embargo lifted entirely if it did not conflict with government activities.

Some years ago the Australian government contemplated putting a 10 per cent tax on all automobile importations, in addition to the duties. May discovered the status of this bill at the last moment and believes that through his efforts the automobile manufacturers of America have been saved thousands of dollars.

He handles his cars in somewhat the same way that American distributors do, except that he has not as good a line of what may be called dealers or sub-dealers. The general arrangement is to put his country dealers on a commission basis, these dealers acting more or less in the capacity of tipsters. They locate prospects and do some of the initial work, but it remains for traveling men from May's organization to finish the job.

A dealer who carries a stock of tires or accessories is called a "stockist."

### Tires Cost 100 Per Cent More

He says the truck business is not now making rapid strides in Australia and the tractor business isn't coming at all as it should, because gasoline costs 80 cents a gallon. Tires cost 100 per cent more than they do here. Cars also cost about 100 per cent more, and accessories cost from 30 to 50 per cent more.

He mentions several interesting facts connected with his wonderful country. He says that the prices of cars vary. It is the custom of the dealer to figure the price by adding to the landed cost of the car any selling expenses and the necessary profits. Because these costs vary in different sections, prices of cars are not the same in all parts of Australia. For this reason an Australian



GEORGE M. MAY

Motor Traders' Association could be of benefit in stabilizing these costs.

If a dealer or distributor of a specialty or accessory or tire in Australia is to be successful with it he should, May states, have the entire Australian distribution, because if an article is sold in one section and not in another it hinders its sale in that section where it is represented. Business competitors soon spread abroad the news that the article is represented in only one part of Australia, and the result is that people imagine there must be something the matter with it.

### Exporters, Watch Out!

He says manufacturers who contemplate securing representation in Australia should be careful whom they select. It is not uncommon, he says, for what we term in this country an "alley-rat garageman" to get a fine letter-head printed and secure the entire Australian representation for a very meritorious article. This can be done if the manufacturer does not investigate before placing the agency. Furthermore, he states, any man who wants to get a couple of tires or some other article for his own personal use can get them at dealers' prices by having a letter-head printed and writing to a manufacturer who isn't careful about his foreign business.

### How the Kaiser Worked

An instance of how Germany was securing a grip on the Australian trade before the war started is related in his connection with the N. A. G. car. He was handling the Humber, Wolseley and Everitt cars and had to pay for these before they left the factories in the countries where they were manufactured. One day along came a representative of a German firm who said he would supply cars to May on consignment, giving him

a dozen cars. Then as fast as he sold a car all he had to do was to order another one and pay cash for it. This meant that the German manufacturer had his own money tied up in twelve cars in May's salesroom, while all May had to do was pay for a car after he had gotten the money from a customer. This proved an acceptable arrangement and he represented this car for some time, but he says he had very hard luck.

The hard luck he complains about consisted of ~~quitting the agency and paying for the half-dozen German cars he had in stock shortly before the war started.~~ If he had held the agency and not paid for the cars until after the war broke out, he says, he would have been six cars ahead, because he never would have paid for them until some adjustment was made after the war. He says Germany never will be able to get another foothold in Australia such as it has had.

#### Cut Out German Names

As to taking the representation for American goods which have names that sound slightly German, he says that would be very foolish indeed, because the goods never could be sold in Australia. There is a certain American article which has an Australian trade, which has had to change its name to Liberty, because otherwise it would not be admitted to the commonwealth.

American manufacturers, he says, do not seem to pay enough attention to Australian conditions. They do not realize the extent of the country. He wrote to one manufacturer, in response to an advertisement in a trade paper, and received a letter stating that the company's representative was in Brisbane, and would "drop around." It so happens that Brisbane is nearly 2000 miles from Adelaide, as one must travel in Australia.

The resources of the country are wonderful and it has been wonderfully productive in wheat, but he states there are millions, and possibly billions, of bushels of wheat rotting and going to waste in the country because there are not ships enough to take it out. Furthermore, there have been mice plagues. As the grain is harvested it is stacked up at the shipping depots in sacks, and the mice get into these enormous house-high stacks of grain, eat holes in the bags and the entire structure collapses and the grain is totally or partially spoiled.

#### Some Harvester!

Australian farmers are using a harvester which May states harvests and threshes the grain and bags it on its way across the field. The bags are sewed up by a man on a platform on the machine and these bags, ready for the market, are dropped off on the field in rows and picked up by wagon. This seems to be going one step farther than the customary most progressive method on American Western farms.

What we call a "ranch" in America is called a "station" in Australia. Anything under 1000 acres—which size generally is under cultivation—is called a

"farm." May has a farm 15 or 20 miles from Port Lincoln on the South Australian West Coast. On the way from his farm to Port Lincoln he states that he believes he saw a million wild rabbits. Wild rabbits are very plentiful in Australia, and trapping (curse) them, canning them and shipping them out as meat is one of the country's industries. Until the refrigerating process was perfected it was impossible for Australia to cash in on its rabbit and cattle industry to anything like the extent now possible, but with refrigerating plants millions of pounds of meat are sent to other parts of the world every year.

#### And Those Rabbits!

The rabbits are a great curse, because they eat the grass. Australia would gladly dispense with its rabbit-canning industry if it could get rid of all the rabbits at the same time. There are laws requiring land owners to kill the pests. Around May's farm is nearly 4 miles of 4-ft. high wire fence, sunk 6 in. into the ground, to keep out the rabbits.

May wears in the lapel of his coat a silver medal about the size of a half dollar, which states that he volunteered for active service in the Australian army for service over seas but was rejected because of physical disability. One of his brothers has already made the supreme sacrifice for his country and another brother is now in the trenches in France. His father, 65 years old and a police pensioner, at the beginning of the war served 18 months as an internment jail guard.

Restaurant prices are much lower in Australia than in America, he states. One can eat there and eat quite well in an ordinary restaurant for 25 to 40 cents and the table service, he says, is much better.

He also has a few things to say about American railway service. In Australia the railroads are operated by the government, and there is no such thing there as what we know as the Pullman sleeper, the sleepers being more or less on the type of our compartment cars. But even then he says the compartments in our cars are pretty poor substitutes for those that are found on Australian roads. On the Australian roads, instead of the aisle side of the compartment being entirely solid and all boarded up, there are windows with shutters and various other conveniences which permit ample ventilation and light. There is also, he says, more room inside and the conveniences are much better. What we know as the ordinary day-coach is a scarce article, if found at all on long-distance lines.

Furthermore, one in Australia can buy a first-class railroad ticket which entitles him to Pullman conveniences, whereas all those things are an extra cost in America. The principal cities in Australia are about the size of Buffalo and Cleveland and are very modern and up-to-date.

#### Australian Slang

It is also interesting to learn of May's acquaintance with some of our American

terms. There are some American words that, used in Australia, have a decidedly profane meaning, and some genteel Australian expressions would hardly get by in an American parlor.

There is an Australian saying, however, which sounds rather catchy, and May has no objection to Motor World readers using it if they like it. Instead of saying "nothing doing," they say "I'm not having any." For instance, he says, "a reporter who met the steamship at San Francisco wanted to write up a story about me, but in Australia we don't get our names in the paper very often unless we ask for it, so publicity of this kind isn't looked upon with great favor. I told the young man *I simply wasn't having any.*"

#### Cut Off Livery Repairs

KANSAS CITY, July 8—Are livery cars "commercial vehicles" under the terms of the conservation program?

Kansas City has decided that they are not.

Livery car owners must comply with the conditions for passenger car owners who operate their cars for their own private business purposes. They can get no service or supplies after 6 o'clock in the evening or on Sundays or holidays from the service stations and battery, tire and oil stations of Kansas City. They may secure tow service under the same terms as the private car owners—but the cars will not be repaired in the interdicted periods.

The public service rendered by the livery cars was fully recognized. But it was felt that the public interest would be no more seriously hampered by applying the rule to livery cars than by applying it to passenger cars operated by owners. Indeed, an unfair advantage would be accorded livery car owners by excepting them—and this advantage might be unduly exercised. With the rule made general there would be no chance for embarrassment of the garagemen or mistakes by employees who might give service to a private car camouflaging as a livery car. The taxicab companies have their own repair shops so that the enforcement of the rule probably will not embarrass them seriously.

#### Jitney by Truck

PHILADELPHIA, July 6—A new use for motor trucks was found for the Fourth of July. Many of the big trucking companies here commissioned their vehicles to act as "jitneys" in carrying the crowds between Philadelphia and Atlantic City for the holiday. Some of the larger vans carried 60 to 70 passengers. Temporary seats had been fitted into the vehicles and they were made surprisingly comfortable. Absence of the usual holiday excursion trains and no special rates on the railroads prompted the trucking concerns to pick up this "extra change." The enterprise is reported to have proved quite profitable in most instances.



# Keeping Up with the Parade

By RAY W. SHERMAN

**J**UST as Henry Bennett, the Redman dealer in Callawassa, walked into the salesroom door and toward Reilly's office the entire organization of the Sennett dealer went trooping out of the office to various parts of the establishment. Henry stared in amazement.

"Getting up an outing?" he asked, as the last of the mechanics filed out into the shop and the typewriters began to click in various parts of the place.

"Oh, no," Reilly laughed. "Just having a little meeting."

"What's the idea? What's going to happen?"

"Not much of anything," was the Sennett dealer's reply. "Just having a little meeting."

**Are Conferences Valuable? Yes, If—**

"Anything serious the matter?"

"No."

"Well it gets me. Do you pull this stuff all the time? Have you turned the place into a debating society—or what?"

"Mostly what," said Reilly. "We have these meetings quite often. We don't ordinarily have the whole bunch in, but we do get the whole gang together once in a while when—"

"Must cost you a lot," was Henry's interrupting comment. "Fifteen minutes each for the whole works runs into money, doesn't it?"

"All depends on how you figure it," said Reilly. "This morning we had them all in to talk about these new war conservation ideas that the National Automobile Dealers' Association is spreading around. They're good stuff for our business, and they'll save us a lot of money—now and hereafter—if we can get the ideas thoroughly instilled into the minds of every person in the place. And I don't know any better way to do it than to get the whole gang together and tell them the big story. I think we'll be amply repaid for the quarter hour we have taken from our regular work."

## Finish What You Start

"Oh—I see," said Henry.

"You ought to have kept up those organization meetings you started down at your place, Henry."

Henry was always starting some good idea and running it like a top for about three weeks—and then he went back again to being just plain Henry Bennett, a young man with a good agency, good possibilities, many good qualities but a lamentable habit of not carrying through the things he started and knew he ought to finish. The result was that he was one of the big army of Average.

"Darned hard job, Reilly," Henry pleaded. "It interfered with our regular routine—"

"Well," Reilly asserted, "if your whole object in business is to keep your routine in shape you doubtless are working along right lines, but if you want to make money now—and next year—and the next year—you've got to keep up with the parade this year."

"What do you mean?"

"Just this: There isn't a day right now that something doesn't change. We go to bed at night with everything running along normal and get up the next morning to find that the greatest collection of railroads in the world has been taken over by the government and their operation has been made simply one of the many jobs of a very capable government executive.

"When we come back from lunch we find that the day of the loafer and society lily has passed. They've got to go to work or go to war. And during the afternoon somebody comes in and tells us what temperature we ought to keep our homes next winter and about how much coal we ought to burn to do it. Economics, business, war, everything, are turned topsy-turvy and the world runs along just the same—only better.

## Doing the "Impossible"

"We find things being done that we said were impossible until they were done. Then we find out that a lot of our old and established opinions and ideas are not worth what we thought they were. We begin to discover that we are several blocks behind the big parade.

"We've got to keep up with the parade, Henry, or we won't be there when the show begins under the big top. We can't lag behind and stay in the real circles of business. The leaders are going to keep in good condition during the war and are going to make the most money after the war.

"Every week we have a meeting of our department heads—sometimes oftener. Every morning we have a meeting of our salesmen. Quite often—at least once a month—we have a meeting of the entire organization from the office boy to the boss.

"In the sales sessions we keep up to date on sales work and try to keep the old machine running at one hundred per cent. In the meetings of our department heads we go into the changing events of the times. We discuss economics, we try to learn how different things are going to affect business, and we try to shape our business policies to meet these changed conditions.

"Out of these department head meetings we select those points that should be brought home to all the people in our organization, and then we get the whole bunch together when necessary and try to educate them all up to the events of the day.

## Conservation Means Progress

"For instance: On this conservation thing, a lot of people may think it is only a war measure, but it is merely progress that would have come eventually and the war has pushed it upon us now. It is something that should have been done long ago. What does it all mean? It means that we are doing something that is going to remain permanently with us. We are putting our business on a real basis. We should carry these recommendations out in full and not in part, because after the war they are going to be standard practice. If we don't go one hundred per cent on them now we'll be just that much behind after the war.

"And here are our selling methods. Some of us—and some of our salesmen—have operated along non-intensive lines. We haven't been real salesmen and sales managers. Can't we see now that this more intensive work is coming? I can see it, and I think any student of events can see it. And what does it mean? It means that we must begin NOW to get into the stride and catch up with the parade instead of waiting until after the war to start catching up.

"I can see where the successful dealer of the future in a town of this size must have a line of cars for all purses and not just one car. I can see this whole automotive idea enveloping the trade. What does that mean? It means that the dealer who gets his hooks on something good NOW will be miles ahead of the rest when the war ends. He will be off to a flying start instead of spending several years getting ready to go.

## All Studying Changes

"There isn't a minute of the day that some member of the organization from the top down isn't in touch with some point of change and progress. There isn't a man or woman in the place who should not be keeping step with events. The better they step the better the organization moves forward.

"Organization meetings are more important to-day than ever before, Henry. And they should be looked after by executives who study things."

Whereupon Henry decided he would make another start and try to run four weeks at least.

# Dealers, Help Your Factory!

Did you ever blame the factory for its lack of service co-operation?

Did you ever want to tell the factory service manager your ideas on service?

Yes—doubtless a hundred times.

But did you ever ask what the factory thinks of your methods of obtaining service?

Here is what a few of them do think.

"IF there was some way in which we could be certain of receiving our orders in an intelligent form, I believe at least 50 per cent of the trouble of which automobile owners complain, would be eliminated," says R. N. Soule, service manager of the Mitchell Motors Co., Racine, Wis.

W. V. DeGalan, manager of the parts order division of the Paige-Detroit Motor Car Co., says: "Ninety-five per cent of the dealers demanding service do not give any thought to the proper way of addressing communications and to the entering of orders."

J. B. Bray, service manager of the Grant Motor Car Corp., states: "In nine cases out of ten the dealer shows a complete lack of attention to detail of any sort as regards the service end."

H. E. Blasington, manager of the repair department of the Haynes Automobile Co., says "that 5) per cent of the cases of poor service and errors are due to insufficient information."

## You Make Your Own Troubles

*There you are, men. Fifty per cent of your service troubles are of your own making. Imagine yourself a service manager of a plant having 1500 dealers. Imagine receiving from 200 to 300 orders every day, and among them a few like these:*

"Please send me a valve for my automobile"—written on a post card, having no model number, no car number, no method of shipment, no nothing. But that's not the worst point of this "order"—post cards should never be used for order blanks.

In the first place, there is no duplicate made when a post card is used—and a duplicate of every order should always be kept in the dealer's file.

Next—a post card is easily lost among the papers in the factory—and cannot be filed readily. It shows a mighty poor method of doing business.

Or, suppose you get an order from a Southern dealer for a rear axle. The order is complete in every respect—except it does not state whether the car is 56 or 60 in. gage. This means a letter or

## Common Dealer Faults

- 1—Failure to give car number.
- 2—Part number and name of part often vary.
- 3—Failure to mark confirmation of telegrams "confirmation," which results in duplicate shipment.
- 4—Attempt to abbreviate part names. If part number is wrong the factory cannot determine the parts wanted.
- 5—Make parts orders out in pencil, causing an imperfect carbon that does not show on all parts of order copies. The factory must then write for further information.
- 6—Failure to place terms on orders for direct shipment to owners.
- 7—Failure to sign firm name to orders; often the man making the order signs his own name, causing confusion in the factory.
- 8—Failure to specify routing.

a telegram for the information—or more likely a standard 56 in. axle is sent—and is wrong. The dealer should make his orders so complete that no mistake is possible.

Again, most factories advise that if shipping instructions are not furnished with the order material will be shipped by express or parcel post. Hence, if the dealer does not want the parts in a hurry he should state "send by freight"—or not complain at the expense of the express shipment.

Many dealers do not carry an adequate supply of wearing parts for emergency calls—and blame the factories for delays in express shipments.

The express companies are not giving the service they did a year or two ago, and the wise dealer will stock up to prevent delays. Certainly the factory is not to blame if an order is shipped within the hour, and a 10-day delay is occasioned through delivery. Yet delays such as this are common.

The above are a few typical examples of what the dealers "do not do" to get efficient service. Now let us see what the factories have done, and how the dealer may co-operate.

## Use Factory Forms

Practically every factory service department has printed order forms that will be supplied to the dealers. The reason for these is simple. If 500 orders are to be handled by clerks each day it is essential that the orders be uniform. It is necessary that the blanks on these forms be properly filled and that a duplicate be kept for the dealer's files.

Parts books are supplied, giving the part number and showing the exact location of the part. If the order is not then clear a rough sketch may be used. But if the dealer will give the car model number, the car number and the part number few mistakes would be made.

Blanks for claim parts are supplied by the factory service station—yet daily boxes of claim parts come into the factory unmarked and not accompanied by a letter of explanation.

Certainly no parts claim is valid if,

### 1—A Common Mistake

"Please send me a front main spring blade."

Erie Garage, Youngstown.

(A common small-dealer mistake, sending an order—really a "dis-order"—on a postal card. He has no record—the card is not dated, and Youngstown might be in Pennsylvania or Peru. And who ever heard of a front main spring blade?)

## Service Manager's Report of Unfilled Stock Orders at the Factory

Date June 24, 1918.

Our Order Number	Date	Part Number	Name of Part	Quantity Ordered	For Stock or Emergency	Shipping Instructions	Date of Shipment	Quantity Received	Balance Promised	Remarks
7563	6-20	A-2-1062	Crankshaft with internal bushing	5	Stock	Freight	6-22	...	...	Should be in 6-29
7552	6-21	A-1-395	Cylinder head gasket.	25	Stock	Freight	6-23	...	...	Should be in 6-30
7548	6-22	A-3-257	Wrist pin for piston (Standard).	6	Emergency	Express	6-22	6	...	Due 6-25
7580	6-11	A-4-238	Connecting rod assembly with bushing	3	Stock	Express	...	...	6-25	...

Fig. 1—By the use of the above form the service manager is kept in touch with the condition of all parts orders. He can keep the owner informed, prevent delays and save wiring expense

## The Wrong Way

## 2—A Telegram

Mitchell Motors Co., Racine, Wis.

Send set piston rings for C-3-48 number 17469 by express.

The Southern Garage.

(Does this telegram mean a set of rings for one piston, or for all? Neither. It means send a return wire to find out.)

## 3—A Typewritten Letter

Some time ago we expressed a box of claim parts, to get a refund under the service policy. To date we have not heard from you, and wish that you investigate and credit us with the amount at once.

The Hamilton Sales Co.

Yes—the box was received, but bore no identification marks, and was accompanied by no letter of explanation. It hung around for a month, and was junked. And now no settlement is possible to dealer, manufacturer or owner. Always send a letter with returned parts.)

## To Order Parts

## 4—Another Telegram

Mitchell Motors Co., Racine, Wis.

Ship by express one right rear fender for Mitchell Mid Year Model. American Garage Co.

(This telegram is meaningless. It contains no serial number, nor does it state whether the car is a roadster, touring car, limousine, or sedan. Another telegram must be sent for the information.)

## The Right Way to Order Parts

## Proper Method of Ordering Parts

FORM B-274

**SUNDRIES**

**FRANKLIN AUTOMOBILE CO.**  
SYRACUSE N. Y.

DATE 6/20/18

ORDER NO. 1

SHIP TO (Name of Dealer's Case)  
(Street and number)  
(City and State)

CHARGE TO (Dealer's name)

SHIP VIA P. O. WHEN ...

GIVE YEAR, TYPE, CAR NUMBER AND COLOR IF PARTS ARE FOR STOCK, THEN STATE SO IN CAR NO. COLUMN

THIS ORDER WILL BE SHIPPED BY **EXPRESS** UNLESS OTHERWISE SPECIFIED.

NO. PIECES	MODEL	YEAR	TYPE	CAR NO.	COLOR	CATALOGUE NUMBER	NAME BY PART	DRAWING NUMBER
1	M	1917	D	14572		12879	Inductance 11.41	
2	M	1917	D	14572		12879	Valve adjuster	

The above Form B-274 supplied Franklin dealers upon request.

## Prevent Mistakes and Delays

Hang this up in your office or repair shop

In Correspondence, Parts Orders or Claims always identify the car by **Serial Number.**

Serial number of all Franklin cars will be found on plate attached to rear sill board as indicated



The following list shows cars by year and series number:

Year	Car Numbers	Year 1918	Year 1919	Year 1920
1913	1 to 219	6025 to 6675 M	7400 to 7999 G	12801 to 12778 G
1914	220 to 320	7000 to 7327 G	8208 to 8813 D	14001 to 14279 D
1915	321 to 332	8000 to 8204 D	9007 to 9091 H	15001 to 15070 H
1916	333 to 338	9000 to 9096 H	12001 to 12323 G	15001 to 15174 M
1917	339 to 4008	10001 to 10021	10022 to 10103 K	10104 to 10117 K
1918	4009 to 6013	11001 to 11011 L	11012 to 11042 L	11043 to 11131 L

Series 1	G 12801 to 13190	Series 2	G 13190 to 13329	Series 3	M 15641 to 16215
D 14001 to 14027	D 14027 to 14052	H 9000 to 9007	H 9007 to 9007	H 9008 to 9052	H 9008 to 9052
H 9001 to 9000	M 15201 to 15411	D Torp. 14901 to 14921	M 15411 to 15640	D Torp. 14922 to 14975	M Rdr. 14901 to 18105
G Rbr. 17001 to 17169	K 10118 to 10204	K 10118 to 10204	O 16003 to 16025	25-H.P. Lim. 9901 to 9912	H 9901 to 9915
	G Rbr. 17169 to 17218				

Series 4 - M Tour 16216 to 16994

Rbr. 18106 to 18205

Series 4 cars with M-5 wiring

M Tour 16961 to 16994

Rbr. 18199 to 18205

Series 5 - M Tour 16995 to 17000

Rbr. 18199 to 18310

Series 6 - M Tour 19511 to 20043

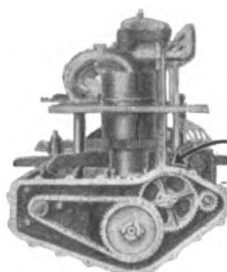
Rbr. 18311 to 18527

Series 7 - M Tour 20044 to 21900

Rbr. 18528 to 18653

Series 8 - M Tour 21901 to 21900

Rbr. 18654 to 18654



Serial number of motor on top of crank case.

If Serial Number of car is missing, specify Serial Number of motor stating in either case which one is given.

See other side of card for proper method of ordering parts

Franklin Automobile Company, Syracuse, N. Y.

Fig. 2—Sample of order form issued by the Franklin Automobile Co. for use of dealers when ordering parts from the factory. Fig. 3—On the back of the order form are printed the serial numbers of cars, with the year of issue. By the intelligent use of these forms mistakes and delays are reduced to a minimum



## How Would You Answer This Letter?

after a month, the parts are junked. Yet many dealers carry on a lengthy correspondence with the factory on as slim a basis as this. Again, the dealer's forms should be used. This is the first dealer rule for proper factory co-operation.

### Rules for Factory Co-operation

1—Always use forms furnished by the factory in ordering or returning parts.

2—Keep an accurate record of the parts ordered.

3—Fill in every blank in the form, such as date, number of parts wanted, name of part, part number, car number and model number.

4—Specify how the parts are to be shipped.

5—Send the order to the service department. In some factories the service department is away from

the factory proper and an improper address causes delay.

6—Mark the crates containing claim parts with the name and address of the sender and follow it up with an explanatory letter. Keep a copy of that letter in your files.

7—Keep a report of unfilled parts orders on file at the factory.

An example of such a report is shown in Fig. 1, and is of the form recommended by the Chalmers company. It enables the dealer's service manager to tell the condition of the stock order at the end of each day, or week, as desired.

By the use of a system of this kind the manager can follow up each order, know the latest information on its delivery, and know what is causing the delay. The customer can be kept informed without wiring the factory. It provides a business-like method of obtaining and giving service.

### 5—A Letter, Written With Pen, on Plain Paper

Maxwell Motor Co.:

Dear Sir:

In regard to this car there was a mistake made in the wheels the rear wheels have the large heavy fellow and the front have the light wood fellow like the 1917 model.

The extra steel rim will fit the rear wheels but not the front.

The front wheels do not fit on the hub. The bearings do not fit so they can be adjusted correctly.

Mr. Hutchinson is writing again about the wheels. Sometime ago he sent and got two extra steel rims the same as the rear but they will not fit the front wheels without the other make of front wheel.

Yours respectfully,

(Wheels, and more wheels—with some of them in his head. How would you answer a letter like this, Mr. Dealer? How you should write it is told in the story.)

THE Pilot Motor Car Co., Richmond, Ind., has made many changes in body designs, but little change has been made in mechanical construction.

The lines of the Pilot five-passenger double cowl touring car have been considerably changed. The streamlines are more pronounced, the cowl has less of a curve, the hood is larger and the radiator higher and narrower. The new touring car also has a few improvements in the way of scuff plates, mahogany instrument board, oil indicator on the instrument board, etc. The windshield is slanted.

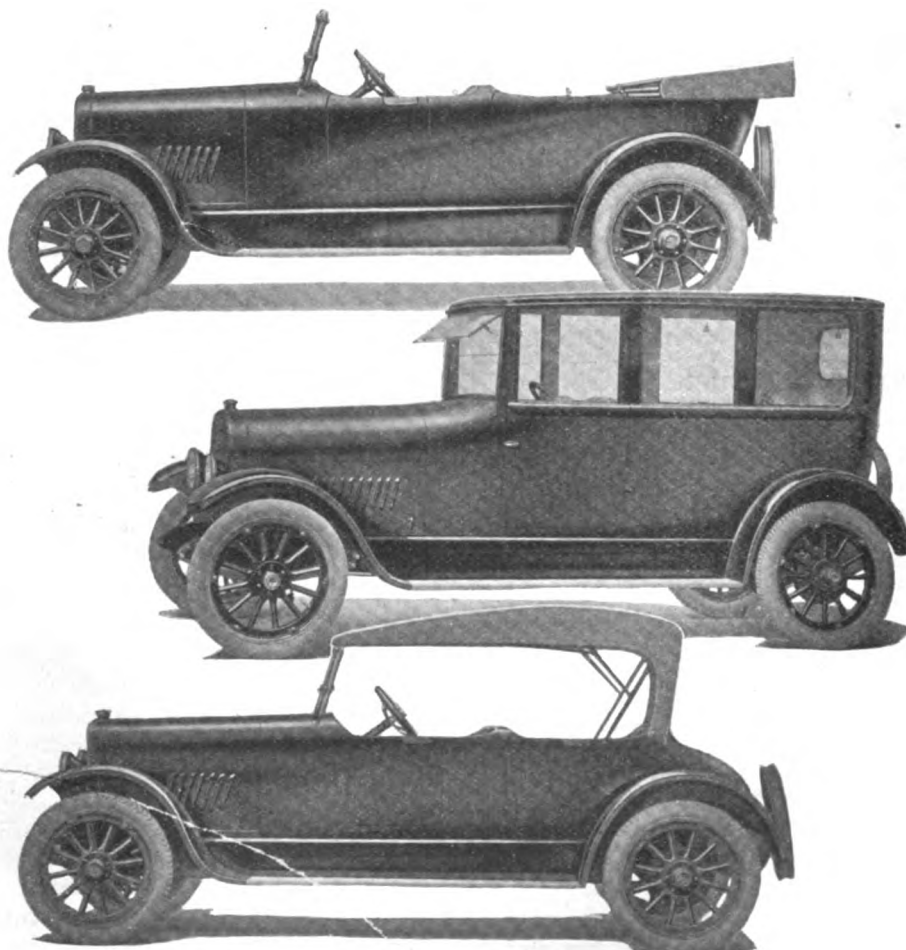
The Get-Chummy roadster, which has two doors, is practically the same as last year, the only changes being in the longer hood, scuff plates on door sills and mahogany instrument board.

The four-passenger military roadster has four doors and is an entirely new creation. The entire back of the rear seat lifts out, exposing the space underneath the rear deck, where parcels, suitcases and other luggage may be carried.

The Pilot five-passenger sedan is of the conventional Springfield type design. The front seats are divided, although there is ample room for the driver. The rear seats accommodate three without crowding. The doors are staggered, one being on the left side so that the driver can get in and out under the steering wheel; the other for the passengers is on the right side for alighting at the curb.

The prices of the Pilot cars for this year are as follows: Five-passenger double cowl touring car, \$1,395; 4-passenger "Get-Chummy" roadster, \$1,395; 4-passenger military roadster, \$1,445; 5-passenger sedan, \$2,045.

## Pilot Changes Bodies



The three new Pilot models: Above, the Six-Forty-Five model which now has a double cowl; in the center, the standard five-passenger sedan model; below, four-passenger, four-door military type roadster model

The editor of this department is glad to answer questions. In sending queries, always include copies of contracts, notes, etc., to which you refer.

# THE LAW

By George F. Kaiser

As It Applies to  
Dealers  
Repairmen  
Garagemen

## Kentucky Lien Law

THE State of Kentucky now gives a lien to dealers and garagemen who repair automobiles or furnish accessories or supplies. Chapter 75 of the laws of 1918, which was passed at the last session of the Legislature, provides as follows:

All persons, individuals or corporations in conducting the business of selling, repairing, furnishing accessories or supplies for motor vehicles shall have a lien on such motor vehicles for the reasonable or agreed charges for repairs, work done, accessories or supplies furnished, for or on machines or for storing or keeping said machines and such persons, individuals or corporations may detain all motor vehicles in their possession on which work has been done by them until the reasonable or agreed charges therefor have been paid.

The lien provided for in this act shall not be lost by the removal of such motor vehicles from the garage, or shop, or premises of the persons, individuals or corporations performing labor, repairing, furnishing accessories or supplies therefor, provided, however, such person, individual or corporation shall assert such lien within six months by filing in the office of the county clerk of said county a statement showing the amount of materials furnished, or labor performed on said car and the cost of same, the said statement to be filed in the same manner as the lien of mechanics and material men.

After the removal of such vehicle, unless the owner thereof shall consent to an additional extension of time as provided for in this act, in which event the lien shall extend for such a length of time as the parties may agree upon, reduced to writing and signed by the parties thereto.

Any motor vehicle remaining in possession of a person, individual or corporation on which repairs have been made, labor performed, accessories or supplies furnished, by such person, individual or corporation for more than 30 days may be sold to pay said charges, but the person, individual or corporation to whom the charges are payable shall first advertise said vehicle for sale six months before the sale is made in some paper of general circulation in the town, city or county where the materials were furnished or labor performed on such motor vehicle.

## Beat an "As-izzer"

I WAS recently retained in an interesting case involving the construction of the words "as is." A contract for a number of motor trucks contained the provision that they were to be sold "as is," and contained a further provision that the trucks sold "as is" carried no implied or expressed warranty either as to condition or equipment, that no promises or agreements verbal or otherwise and not contained therein were binding.

The purchaser of the trucks whom I represented contended that at the time he bought them the chassis were shown to him in a storage warehouse and magnetos were shown to him in a stock room a mile away. The seller contended that as the trucks were sold "as is" only the chassis were included in the sale. The court, however, adopted my view of the matter and decided that both the chassis and magnetos were included despite the above endorsement on the contract.

## Wants His \$200

EDITOR Motor World: We have run up against the most brazen hold-up proposition that we ever heard of in the automobile business. We do not know anything about the New York State laws in connection with matters of this kind, and as a subscriber to Motor World are writing to ask if you know of any way other than by lawsuit we can secure \$200 held by the ——— Motor Truck Co. as a deposit. Following are the circumstances connected with the transaction:

About three years ago we signed a contract with the ——— Motor Truck Co., whose representative asked us to put up a deposit of \$200 to protect our parts account as well as an evidence of good faith. There is no deposit forfeiture clause in the contract.

At the expiration of this contract, owing to the fact that there was very little truck business in this territory at the time, we advised the ——— company that we would not care to enter into a renewal; that we were perfectly willing, however, to continue to sell the trucks wherever possible, with the understanding that if at any time they could secure another agent in this territory it would be perfectly satisfactory to us, and as evidence of our good faith in the matter we were willing to allow our deposit to remain in their hands.

In the way of explanation as to our reason for doing this would say that the ——— company felt that we were not selling as many trucks as should have been sold. The market was not here but we could not make them understand this. They would not, or could not, place another agency here, and at the expiration of about another year we asked them to return our deposit. This they absolutely refused to do unless we buy a truck from them. It is our understanding through the representative who signed us up that this is one of their favored methods of doing business in the smaller centers.

If there is any advice you can give us in the matter it will be greatly appreciated.—CENTRAL GARAGE & ELECTRIC SUPPLY CO., Hagerstown, Md.

Answer—No one can advise you regarding a contract without an opportunity to examine it carefully. The chances are that there is some clause in the contract that you signed which gives the company the right to retain your deposit. You should have retained legal counsel to advise you when you signed this contract. As you did not do that you had better consult one now to see if there is some way by which your deposit can be recovered.

## What "Current Catalog" Means

In a late Alabama case the words "current catalogs" were defined by the highest court of that state. It was decided that under a contract to sell automobiles as shown in current catalogs the words "current catalogs" mean such catalogs as should from time to time be issued, not merely the catalogs in existence at the time the contract was made.

## Amendment in Missouri

Section 1366 of the Missouri Code has been amended so as to include garages and gasoline stations in the Sunday exemptions.

## "Fire-proof" Means Fire-proof

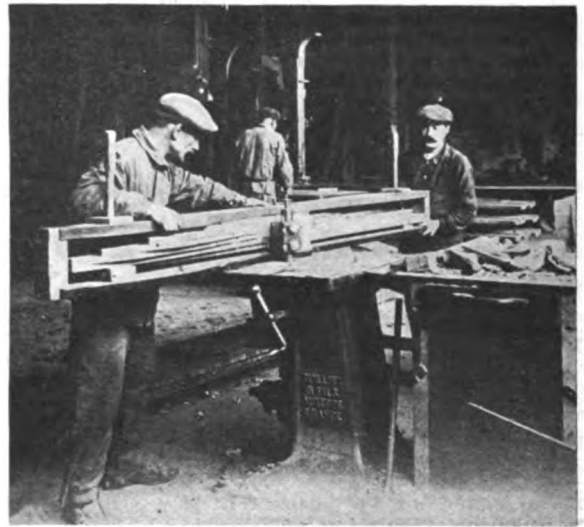
Suit was recently brought in California against a warehouseman for the loss of an automobile which had been destroyed by fire.

The court held that evidence that the warehouseman had advertised in a telephone directory that his warehouse was fire-proof was proper evidence, when the contract expressly provided that the goods were to be stored in a fire-proof warehouse.

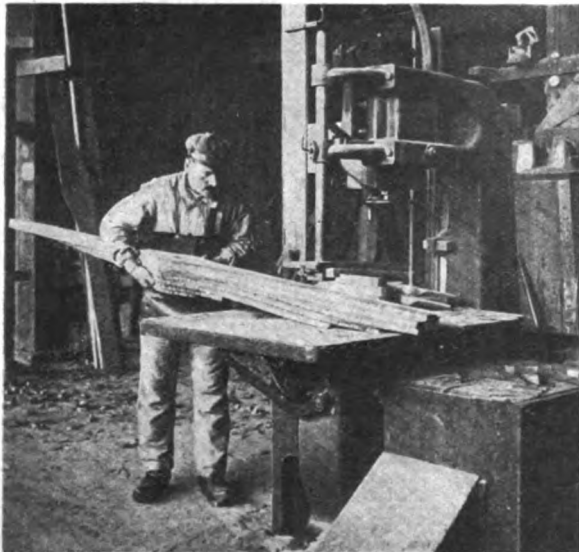
# Manufacture of Airplane Propellers



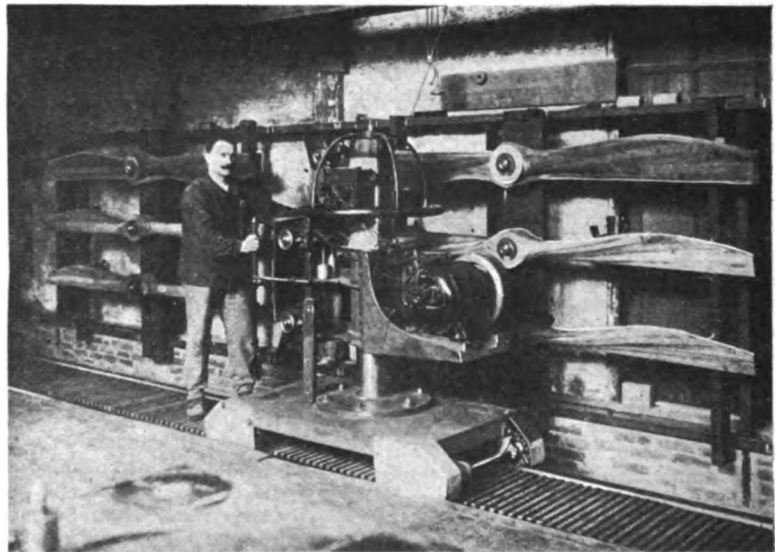
*The wood of which the propellers are made is first steamed in these special steaming boxes to make it sufficiently flexible to be easily bent to the required shape*



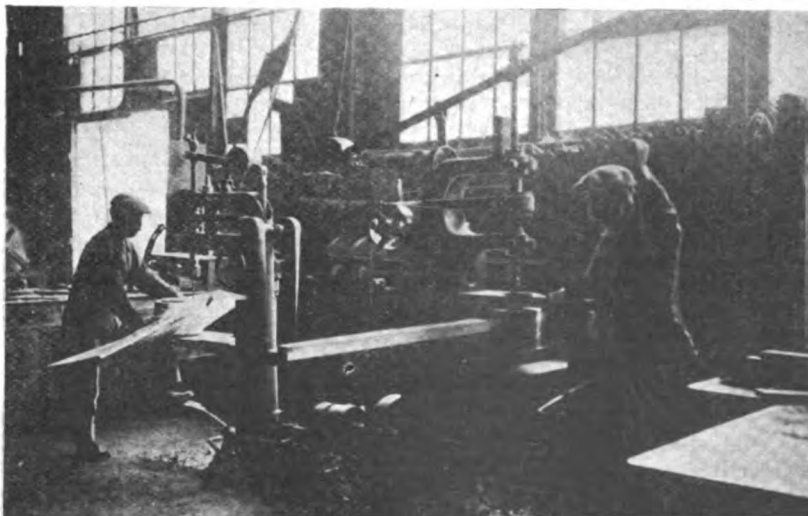
*This operation shows the press used in holding the thin wood laminations together during the process of fastening*



*The propellers are first sawn roughly to shape with a band saw, the final cut being made by machine*



*This is the machine that trims the rough-sawn propellers to their final shape. Three propellers are trimmed at once*



*In this operation the hubs are centered and fastened in place*

©Kadel & Herbert, New York



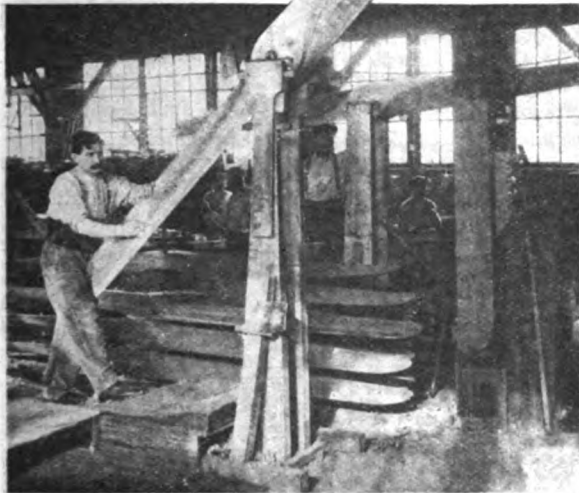
# As Carried On in a French Factory



*Before the propellers are finally polished they are accurately measured*



*Final inspection department, where propellers are subjected to minute scrutiny for imperfections in construction and finish*



*Putting the final touches to a 20-ft. propeller for a naval dirigible*



*Finishing department, where the propellers are varnished and polished*

*Putting on the linen tips, this being one of the last operations completed*



*A Department of***BETTER MECHANICS***No. 74***Overhaul Operations on Reo Model J  
2-Ton Truck****1—Front Axle**

**N**O special tools are required in overhauling the front axle of the Model J Reo truck. Solid wrenches of the following sizes will be required:

Opening	Hexagon Nut Size	Opening	Hexagon Nut Size
$\frac{1}{2}$	$\frac{1}{4}$	$1\frac{1}{16}$	$\frac{5}{8}$
$\frac{9}{16}$	$\frac{5}{16}$	$1\frac{1}{4}$	$\frac{3}{4}$
$\frac{11}{16}$	$\frac{3}{8}$	$1\frac{3}{8}$	$\frac{7}{8}$
$\frac{13}{16}$	$\frac{7}{16}$	$1\frac{1}{2}$	$1\frac{1}{4}$
$\frac{3}{4}$	$\frac{1}{2}$		

The sequence of the major operations is:

- A—Remove wheels.
- B—Remove steering connections.
- C—Remove springs.
- D—Remove spindles.

**Removing Wheels**

1—Jack up both ends of the front axle till the wheels are clear of the floor. The jacks can remain under the axle during the operation of removing the wheels or the axle can be dropped on short horses.

2—Remove two hub-cap lock screws. These are round head screws with slots and are taken out with a screw driver.

3—Pull hub cap off.

4—Withdraw the cotter pin from the spindle.

5—Unscrew the  $1\frac{1}{4}$ -in. castle nut from the steering spindle.

6—Remove outer bearing thrust washer.

7—Pull the wheel off. The outer bearing (Timken No. 3360) comes off with the wheel. The inner bearing (Timken No. 4554) and the rollers stay on the spindle and the cup comes off with the wheel.

8—Remove the other wheel in the same way.

**Removing Steering Connections**

1—Jack up the front end of chassis frame and insert horse or other support.

2—Take cotter pins out of tie-rod bolts.

3—Take the two  $\frac{3}{8}$ -in. nuts from the tie-rod bolts.

4—Remove the two tie-rod bolts.

**By J. HOWARD PILE**

5—Remove ball and socket connection to steering arm by removing the cotter pin and unscrewing the adjusting plug with a flat piece of steel and a monkey wrench.

6—Take cotter pins out of bottom ends of steering spindle bolts.

7—Undo  $\frac{7}{8}$ -in. S. A. E. nuts on bottoms of steering spindle bolts.

8—Remove spindle bolts.

9—Lift out steering spindles and thrust washers which are on top of them.

**Removing Springs**

1—Frame of chassis is to remain supported by horses and the axle is held up by jacks or short horses.

2—Remove cotter pins from the spring-hammer bolts.

3—Remove four  $\frac{3}{4}$ -in. thin nuts from spring-hanger bolts.

4—Drive out hanger bolts with punch.

5—Lower the axle onto a factory truck or roller jack and pull it out from under the chassis, or it can be lifted out by two men, one on each end. Place the axle on the bench or stand.

6—Take off  $\frac{5}{8}$ -in. spring-clip nuts.

7—Drive out spring clips.

8—Put spring in vise.

9—Remove king bolt and nut.

10—Keeper for spring clips and front spring-seat pad will drop out.

The axle is now completely taken down and all parts are to be well washed and carefully examined for wear, breakage

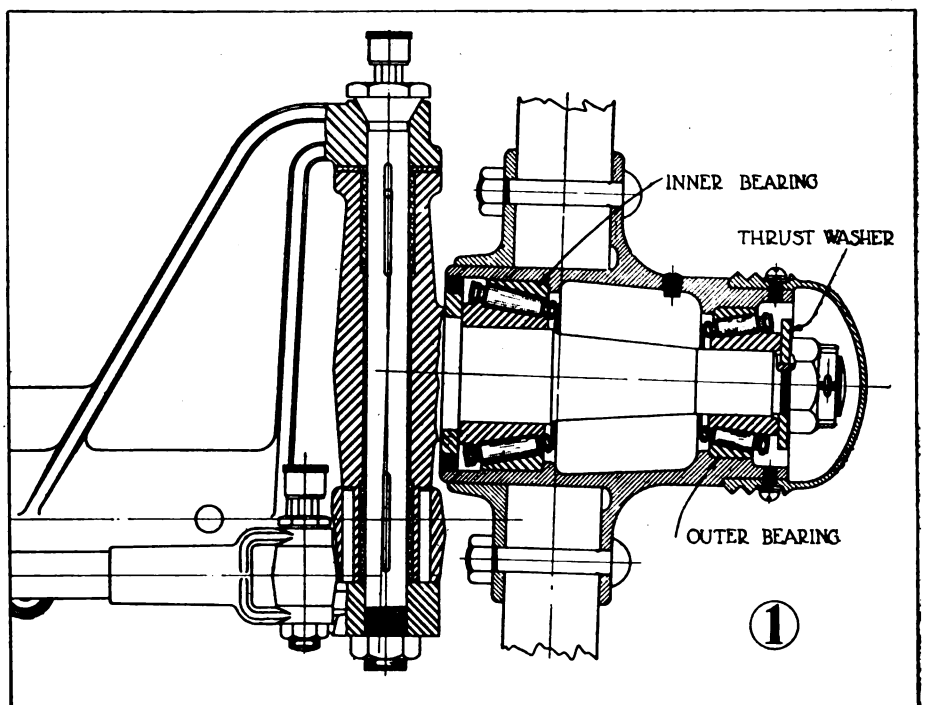


Fig. 1—A section of part of the wheel hub, steering spindle and axle, which are disassembled in overhauling the front axle

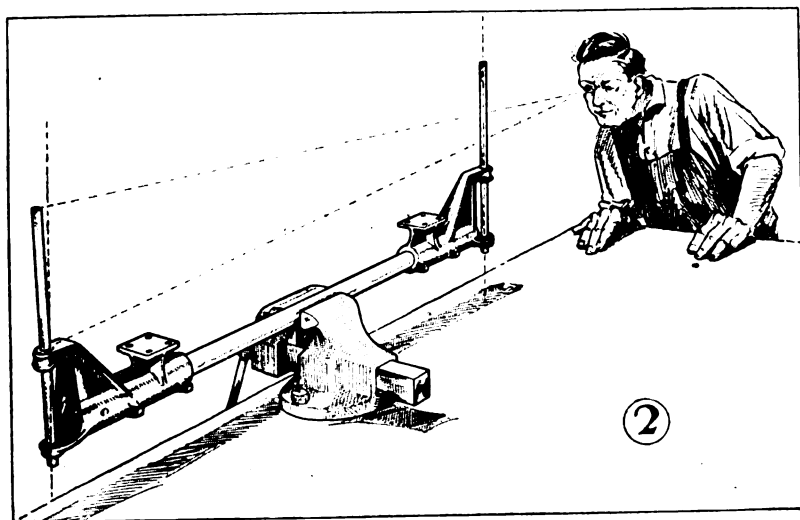


Fig. 2—Testing the alignment of the axle by inserting rods in the spindle-bolt holes

and other damage. The parts probably requiring replacement if the truck has seen considerable service or if lubrication has been neglected will be: (1) spindle-bolts, (2) spindle-bolt bushings, (3) spindle thrust washer, (4) spindle arm bushings and (5) tie-rod bolts.

Wheels without hub and flange, including spokes, felloe, steel rim and bolts for rim to felloe can be furnished by the Reo factory or branches, but owing to the method used in constructing these wheels, individual parts are not furnished separately.

See that the plugs in the wheel hubs are not missing. If the plugs are lost, replace with new ones. They are  $\frac{1}{8}$ -in. pipe plugs with either square or slotted heads.

Replace lost or damaged grease cups on spindle bolts, tie-rod bolts and spring-hanger bolts.

Test axle for alignment by putting a piece of rod through the holes for the spindle bolts in the axle ends and sighting across them. If they do not line up, the axle should be straightened till they do line up. The method of testing for alignment is shown in Fig. 2.

Take the spring leaves apart and remove all rust with scraper and emery cloth, wash thoroughly and put together again with graphite grease. Inspect bushings in spring eyes for wear and replace if necessary.

If any parts of the wheel bearings are badly worn, cut or damaged, the entire bearing will have to be replaced. The outer bearing is Timken No. 3360, inner bearing Timken No. 4554.

#### Assembling the Axle

In assembling the axle, the operations are best performed in exactly the reverse order that was followed in taking the axle down. Setting-up operations are briefly as follows:

- 1—Replace keeper for spring clips and seat pad.
- 2—Replace king bolt and nut.
- 3—Replace spring clips.
- 4—Put nuts on spring clips and tighten.
- 5—Place axle under car and jack into position.

- 6—Insert hanger bolts.
- 7—Replace nuts and tighten.
- 8—Insert new cotter pins.
- 9—Replace steering spindles and thrust washers.
- 10—Replace spindle bolts.
- 11—Replace spindle-bolt nuts and tighten.
- 12—Insert cotter pins in spindle-bolt ends.
- 13—Replace drag-link end on ball of steering arm.
- 14—Fill with grease.
- 15—Screw plug in with flat piece of steel and monkey wrench till there is no play.
- 16—Insert cotter pin.
- 17—Replace tie-rod bolts.
- 18—Replace tie-rod-bolt nuts and tighten.
- 19—Insert cotter pins.
- 20—Grease wheel bearings.
- 21—Place wheel in position on spindle.
- 22—Replace outer bearing thrust washer.
- 23—Adjust so that the wheel turns freely on the bearings, yet does not shake, then insert cotter pin.
- 24—Replace hub cap.
- 25—Replace two hub-cap lock screws.
- 26—Replace other wheel.

27—Take jacks and horses out from under frame and axle.

Line up front wheels with a gage. The wheels should toe in slightly at the front. Alignment is changed by loosening the locknut on the right end of the tie rod, taking out the tie-rod bolt and turning the yoke around on its thread. Screwing the yoke further on the rod will bring the wheels together at the front and unscrewing the yoke will increase the distance between the fronts of the wheels.

See that there is no lost motion in either end of the drag link. This adjustment is described in operations Nos. 13, 14, 15 and 16.

(To be continued)

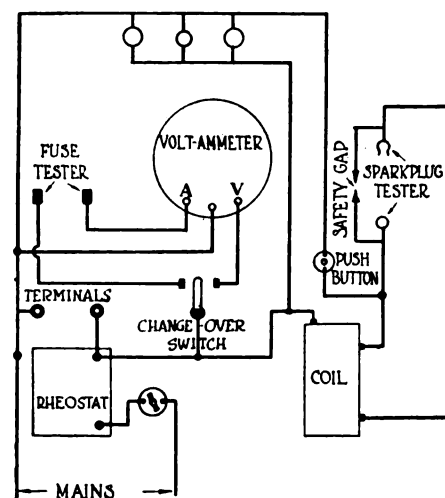
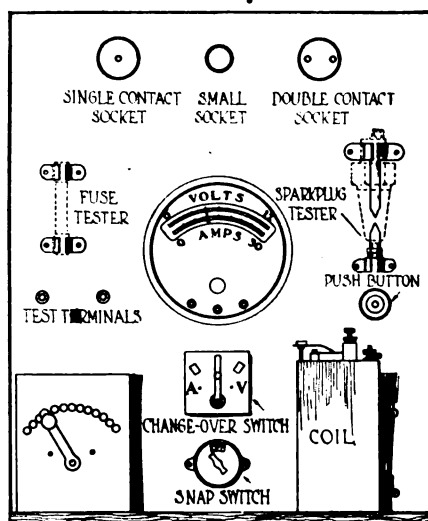
#### TEST BOARD USING 32-VOLT CURRENT

Editor Motor World: An explanation and wiring diagram of a test board for lamps, coils, plugs, etc., using 110-volt alternating-current transformed and reduced to 6 volts appeared in your May 22 issue. Would it be possible to operate such a test board using 32-volt current from a farm light and power plant?—John E. Groh, Freistatt, Mo.

The switchboard that was illustrated is intended for use with 110-volt alternating current. The transformer changes this to direct current of low voltage from 1 to 16 depending on where the arm of the transformer is placed.

The farm lighting and power plant current which you propose to use is 32 volts direct current. You therefore, have only the problem of reducing the voltage from 32 to 6 as it is already direct. This can be done by a resistance unit or rheostat which will absorb the other 26 volts. A diagram of the test board using the rheostat is shown.

If the test board is used much, a more economical way would be to get a 6-volt storage battery and connect it up to the test board, charging the battery from the lighting and power plant whenever it runs down. The wiring diagram in such a case would show the storage battery connected to the leads marked "mains" and there would be no rheostat.



Test board for use with 30- or 32-volt current from farm lighting plant



# Repairshop Shortcuts

*From Motor World Mechanics*

## No. 1737—VALVE-STEM-GUIDE PULLER FOR OVERLAND

A valve-stem-guide puller for the Overland Model M-83 is made from a piece of cold rolled steel 12 in. long by  $\frac{1}{4}$  in. diameter. One end is squared off so that it can be held with a wrench and a thread  $\frac{1}{4} \times 10$  is cut for a distance of  $3\frac{3}{4}$  in. from this end. The next 4 in. of the rod is turned down to  $\frac{1}{8}$  in. diameter and left smooth, and the remaining 4 in. is turned down to  $\frac{1}{8}$  in. diameter and threaded  $\frac{1}{4} \times 16$  for 1 in. from the end. The other parts used with the puller are a  $\frac{1}{4}$  in. nut,  $\frac{1}{4}$  in. washer, valve plug with threads turned off and  $\frac{1}{4}$  in. hole bored through the center,  $\frac{1}{4}$  in. nut and a steel bushing  $\frac{1}{4}$  in. long,  $1\frac{1}{2}$  in. outside and  $.3/16$  in. inside diameter. To pull a bushing, the valve plug is slipped over the center part of the puller, the thin end of the puller pushed down through the valve-stem guide, the washer and nut put on from underneath, the bushing placed above the valve plug on top, the  $\frac{1}{4}$  nut screwed on the large end, and then when the nut is set down with a wrench, the square end of the puller being held from turning, the guide will be pulled out.—B. H. Andrews, Willys-Overland Repair Shop, Albany, N. Y.

## No. 1738—NEUTRAL BAR FOR FORD BRAKE LEVER

A bar to hold the Ford brake lever in neutral when the car is being towed by another is made of  $5/16 \times 2$  in. iron. There are four parts to the bar, the rear end bent to clamp on the bottom of the seat, the front end to clamp on the handle of the brake lever. The bar is divided at the center and a series of holes bored in each piece. A bolt and nut may be put through any one of the holes when the bar is extended the proper length to hold the lever.—J. R. Marvin, St. John & Titus Garage, Tenino, Wash.

## No. 1739—STORING CAR PARTS

Parts of cars that have to be stored pending replacement of some part are conveniently and safely stored in a large box with hinged lid shaped like a contractor's tool box. The box is mounted on wheels so that it can be easily moved about, and has a shelf in the back on which are placed small boxes or trays for the small parts. After the car is disassembled and the parts put in the box it is locked, marked with the car number and rolled out of the way till needed. When opened all the parts will be there and not "borrowed" for some other car.—W. W. Wright, Federal Service Station, New York City.

## No. 1740—COTTER-PIN PULLER

A cotter-pin puller especially useful on the back main bearing of a Ford, is made from a piece of thin rod 12 in. long, pointed and bent at one end and threaded at the other. A weight with a hole in it is slipped on the rod, and a nut screwed on the threaded end. The point of the hook is put into the eye of the cotter-pin, and the weight is slid back against the nut, acting as a hammer.—F. R. Crocker, Sunflower Garage, Superior, Neb.

## No. 1741—REMOVING A BROKEN VALVE CORE

A broken valve core is removed by pushing a cotter pin in the stem so that the legs straddle the valve pin. The legs are then squeezed together with a pair of pliers, gripping the pin so that it can be pulled out.—N. N. McCam, Brooklyn, N. Y.

## No. 1742—REMOVING A BROKEN VALVE CORE

A broken valve core is removed by heating the valve stem with a candle or

torch. This melts the rubber which has sealed the broken core in the stem, and if there is any pressure in the tire, the broken core will be blown out as soon as the rubber melts.—C. M. Lanning, Keystone Garage, Jersey City, N. J.

## No. 1743—CUTTING HOLES IN STEEL INSTRUMENT BOARD

A tool to cut holes in a steel instrument board for installing clocks, etc., is made on the principle of a washer cutter. The vertical part of the tool is a piece of  $9/16$  in. drill rod  $4\frac{1}{2}$  in. long, the top part squared to  $5/16$  in. for a distance of  $1\frac{1}{2}$  in. and the bottom turned down to  $\frac{1}{4}$  in. diameter for a distance of  $\frac{1}{2}$  in. A  $\frac{1}{4}$  in. hole is drilled through the upright piece a little above the bottom, and this is filed out to  $\frac{1}{4}$  in. square, and a hole is drilled and tapped into the side of this to take a set screw. The radial arm is made of  $\frac{1}{2}$  in. square steel 3 in. long with a hole drilled in one end for the cutting tool which is of hardened or self-hardening steel. The cutting tool is held in place with a set screw. To use the tool, a  $\frac{1}{4}$  in. hole is drilled in the instrument board and the tool is turned with a bit brace, inserting the nib of the upright in the drilled hole.—B. H. Andrews, Willys-Overland Repair Shop, Albany, N. Y.

## No. 1744—SUPPORT FOR CHAIN TACKLE

A support for a chain tackle which allows the tackle to be moved along over a row of cars is made by suspending a length of 3-in. iron pipe from the ceiling I-beams with pieces of flat iron or steel. The sketch shows the pipe running at right angles to the I-beams, and the flat pieces have a right-angle twist in the center. If the pipe is to run parallel to the beams no twist is necessary. The pipe is about 10 ft. from the floor so that the rope sling can be moved easily.—Bethlehem Truck Service Station, New York City.

## No. 1745—INCREASING HEIGHT OF A PORTABLE CRANE

A portable crane can be made higher by removing the bolts that hold the standard to the base, inserting a section of I-beam under each leg, drilling holes in the I-beam to correspond to the holes in the legs and bolting the whole together again, using long bolts to go through legs, I-beams and base.—Garford Motor Truck Co., New York City.

## Make a Dollar

*How often have you been compelled to rack your brain to overcome some difficulty? But when you did find a solution—what a satisfaction it was! Well, here's a chance for you to dig some of those life-savers out of their hiding places and put them to work for your fellow-craftsmen. Send them to Motor World. We will pay you a dollar for every one accepted for publication. The only requirements are these:*

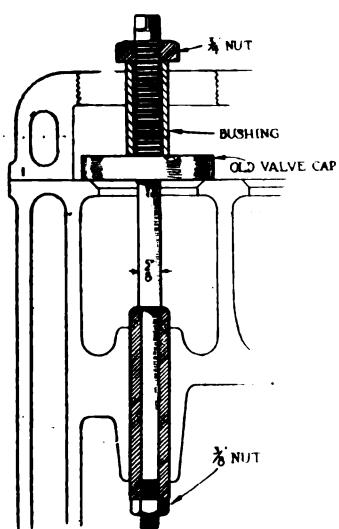
1—Describe the shortcut briefly but clearly, in few words.

2—Send a sketch, in pencil or pen, no matter how rough; our artists will finish the job.

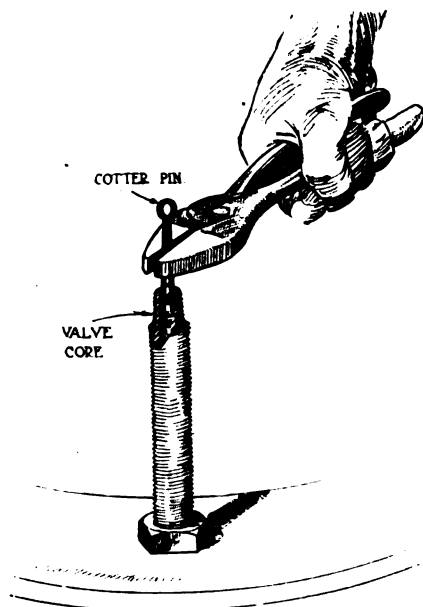
3—Write on ONE side of the paper only.

4—Sign your name and initials, the name of the company you are with, and the town.

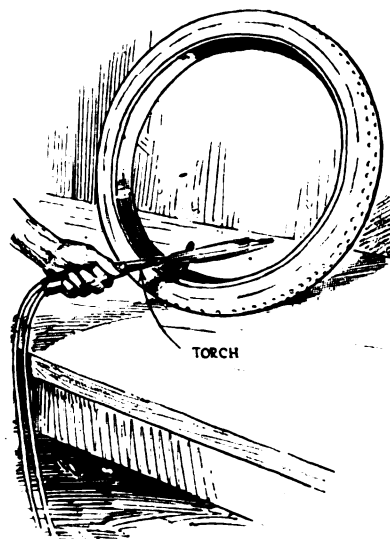
Write plainly. If your name is unusual, print it in capital letters.



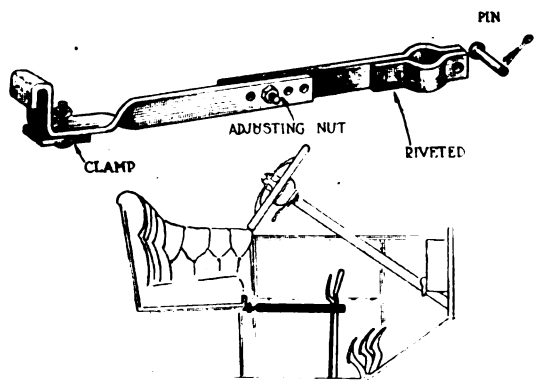
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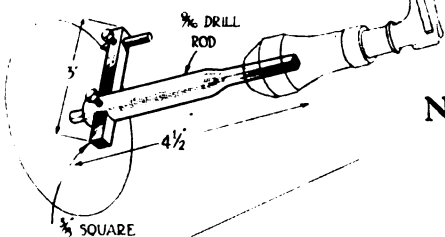
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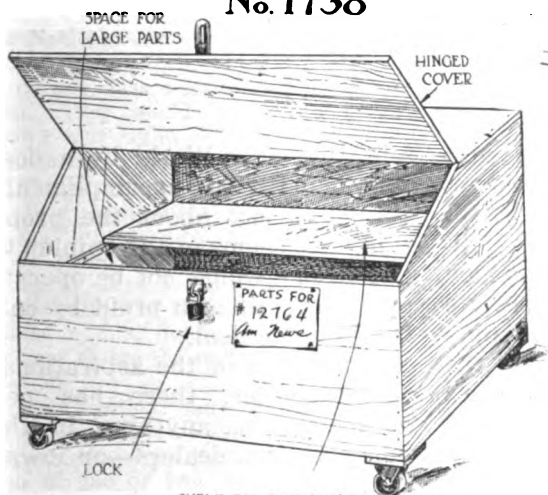
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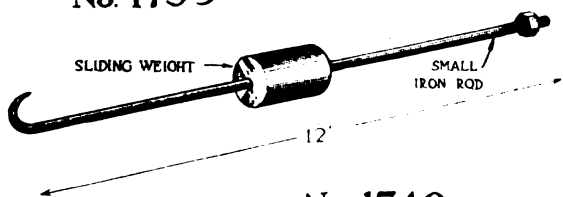
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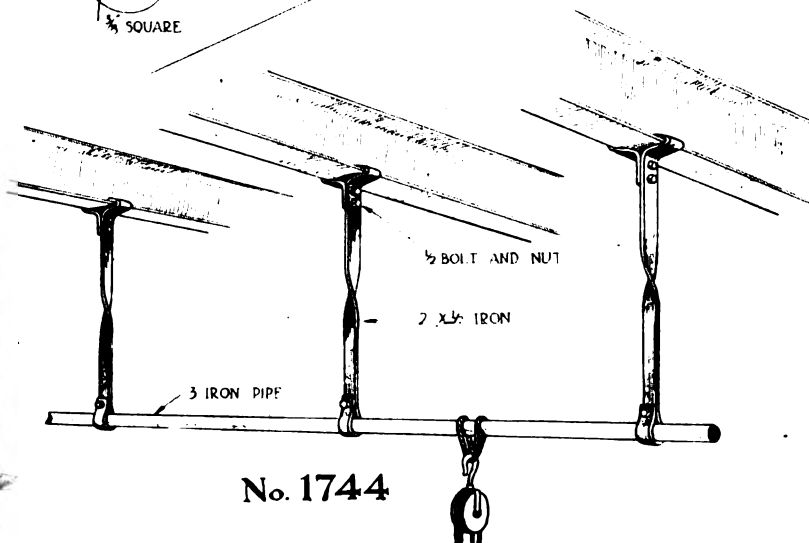
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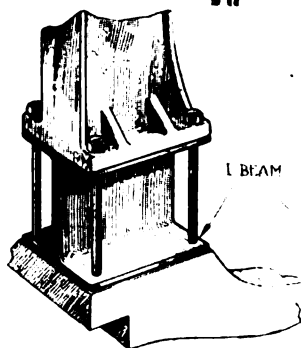
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No. 1744



No. 1745

# Editorial Observation

## New York Showed the Way

**A** WAY out of the headlamp glare muddle has been found. After months of careful study and after consulting with the best engineers that could be found, New York State has at last developed a plan for standard tests of glare eliminating devices—a plan which is based upon science and mathematics instead of on the mere opinion of observers who may be competent, but who generally are not because of the absolute lack of standards upon which to base judgment.

In thus taking this difficult problem out of the realm of guesswork and placing it on the sound foundation of known and recognized facts, New York State has taken a long step in the proper direction. And she went about the work in a truly workmanlike manner.

First, a law was passed making the elimination of glare compulsory—and this is as far as any other state has gone as yet.

Next, a clause was placed in the law making pro-

vision for the proper testing of devices intended to eliminate glare.

And now, Secretary of State Hugo has made public the exact method by which such devices are to be tested and has put down in language that anyone can understand exactly what a headlamp can do and what it cannot do by way of illuminating the highway and causing unnecessary glare.

The method of making tests was not decided hurriedly or without the most careful preparation. The action of Secretary Hugo in calling on the thoroughly qualified experts of the Society of Automotive Engineers and the Society of Illuminating Engineers is an example of the kind of co-operation—and common sense—of which there should be more.

It has remained for the great State of New York to show the way to eliminate glare. Very likely other states will follow the same method. And until they do so there will always be confusion, and trouble—and glare.

## The "Fall Guy" Crop

**F**UNNY how some folks never want to work for a living. And it's also odd how they seem to think the motor car business is something to be honored with their workless work.

Now comes a gentleman from that Hub of the Universe, known on the map as Boston, with a wonderful automobilists' co-operative scheme—one of those things that have been tried in the trade many times before and which have netted some promoters not a few shekels—and not much of anything to anybody else.

He asks dealers and garagemen to sign a "contract" that they will give a 10 per cent discount to members of the league, excluding gasoline. The "party of the first part," the league, agrees to do not much of anything in the contract.

However, in a letter sent with the contract, the "yours-for-co-operation gentleman" states an intention to issue a pocket-size directory of Massachusetts in which will be listed the cities of that state and in each city "a hotel, supply house and garage," but while the contract offerer says he "*reserves the right to accept only the first contract from your locality*" *he does not agree so to do.*

It is difficult to ask the promoter of this enterprise where the dealer and garageman gets anything out of it because none of the stationery of the outfit bears at any place the name of an individual. The name of a man or woman does not appear anywhere in the writing. There is nothing but an address on Beacon Street, Boston.

The letter and "contract" were

sent to Motor World by a dealer who had various uncomplimentary things to say about the proposition. He seems of the opinion that any dealer would not be operating greatly to his own profit by entering into the deal.

Regardless of the aspirations of the promoter, there has never proven to be anything in these schemes for dealers—or owners either.

Some such ideas have been advanced by otherwise stable men—but the ideas didn't work—and they won't.

The dealer's success lies in over-the-counter transactions in the recognized channels of trade, and the greatest value the customer will ever get for his money will be by doing business across that same little old counter.



## Letters from Readers

*THIS page is for the use of MOTOR WORLD readers with something to say. Letters on subjects of interest to dealers, garagemen, repairmen and jobbers are always welcome.—EDITOR.*

### That Closing Recommendation

Editor Motor World: There seems to be some confusion in regard to the order of the government in reference to closing up of automobile deliveries and service stations every evening at 6 o'clock, and on Saturday evenings remaining closed from 6 o'clock until Monday morning.

I would like to know what they call a service station. Does it not include the owner of a public garage? In other words, does a man who owns and operates a public garage have to conform with that rule? I take the liberty of asking you this question, feeling that you are in closer touch with the situation than anyone else connected with the automobile business.—H. E. Halbert, Garage Owners' and Automobile Dealers' Association of Illinois, Chicago.

Answer—What you have reference to is not a government order. It is a recommendation coming from the government, but is not to be construed as an order. However, it is recommended that the plan be put into effect as far as possible, in order to effect certain economies so that no order on the subject ever will be necessary.

The National Automobile Dealers' Association fathers these recommendations. They do not class a garage as a service station. They would like to have you cut down your night, holiday and Sunday service so far as possible, but this refers more specifically to the repairshop end of it. It is admitted that storage garages must maintain service nights and Sundays in order that cars may operate. However, if there are certain employees and certain lines of work that can be discontinued nights, Sundays and holidays that comes within the spirit of the recommendation.

In some sections even garages have taken up with these resolutions and are practically closed up tight, with the exception of one or two men, during the period mentioned. The recommendations do not mean that garagemen are compelled to close up tight during the periods mentioned.—Ed.

### Ford Sales Letters

Editor Motor World: We are wondering if it is possible for you to furnish us a copy of an appropriate sales letter for following up a prospect after the salesman has made his first call. We would like three different types of this

letter so that we would be sure of covering the entire Ford field with the proper letter. You will appreciate that one type of letter could not be sent to every prospect. Awaiting with interest your advice, we are yours very truly, Ford Sales and Service, F. S. Milward, Pontiac, Mich.

In order to have some basis of classification on which to operate, we have divided your customers into two parts, those who are going to use their cars for business purposes only, and those who are going to put them to general use, which includes part business and part recreation purposes and other work.

These letters are somewhat general in tone, but we believe will be specific when read by the prospect.

In case there is any particular sales point that you wish to impress upon the prospect or if there is any peculiarity in his particular case, you can insert a paragraph at any point in the letter that is desired.

### Letter for General Use

In these days of international disturbance it is a problem with all of us to keep our minds working clearly.

We sometimes have trouble keeping our spirits up to that high notch that is necessary if we are to be a strong nation in our present great conflict.

We read bad news in the papers, and, while we know we shall come out all right in the end, we are temporarily depressed. We have the blues. It takes several hours or days for us to recover our smiling, fighting spirit.

In days like these the motor car demonstrates one of its greatest values. An hour in the car brings us back to our old selves. We regain our old spirit. We become more efficient in business, and in our country's business.

We can use the car in business as well as for that great side partner of business—recreation and helpful rest. And in choosing a car these days you should conserve as far as possible, and get the most for your money, which is why we have recommended to you the Ford car.

It costs less than any other and does all that you would ask any other car to do. We have one waiting for you. The demand is great and the stock moves fast. Telephone us to hold a car for you.

### Letter for Business Use

What would you think of a doctor who made all his calls afoot?

You'd class him as rather inefficient and out-of-date, wouldn't you? He could make many more calls per day in a motor car than he could hope to make afoot unless his business were confined to a block or two of his house?

Doesn't the same thing apply to your own business?

Are you efficient if you are using time in slow travel when you could cover the ground more rapidly? One of the greatest business losses to-day is that of time. The minutes spent in talking with people are few. The greater part of the time is spent in going from point to point.

Why not cut down the time consumed in traveling?

Make the working minutes count.

If one man with a car can do as much as two men without a car don't you think you NEED the car?

And in these days can you afford to buy any other car than the Ford? It does all you would ask of any car and costs less than any other.

Our stock diminishes rapidly, but we have one for you to-day. Telephone us to hold it for you.

### How St. Louis Conserves

Editor Motor World: I am enclosing herewith two letters which we are sending to our trade and which are self-explanatory.—Yours very truly, Bittel-Leftwich, St. Louis, John F. Shuford.

### To the Automobile Trade:

We were to-day called before Mr. Sigmund Baer, chairman of the Board of Missouri Council of National Defense, Conservation Division, and handed the enclosed letter, which is addressed to those of us engaged in the automobile business and all its kindred lines.

It has been decided that the closing hour for week days will be 7 p. m. instead of 6 o'clock, and all day Sunday and holidays. This order affects every one engaged in the selling and repairing of automobiles, whether passenger cars or trucks, accessories, tires, oils and gasoline.

Our committees have done a great deal of work and most of the dealers in St. Louis have already volunteered to close, which shows their patriotism.

It is now an order from Washington, as per the letter enclosed, and we know that you will comply with same.

For any further information, phone our secretary, Mr. R. E. Lee, Olive 2630.

Very truly yours, Motor Accessory Trade Assn. of St. Louis, John F. Shuford, President, and St. Louis Auto Mfrs. and Dealers Assn., Jos. A. Schlecht, President.

St. Louis, Mo., June 27, 1918.

### To the St. Louis Auto Manufacturers and Dealers Association, Motor Accessories Trade Association:

It is my duty as chairman of the State of Missouri Council of National Defense, Conservation Division, to bring about the saving of man-power in order to help win the war.

The department stores as well as retail grocery stores have already agreed

to make one delivery a day over each route instead of two or three as heretofore, which is resulting in saving of manpower as well as in saving equipment.

Would it not be possible for your organizations to close your doors evenings at a reasonable hour, which, I believe, would release a great many men for the good of the cause.

I should be pleased if you would arrange a meeting at an early date and let me know what you have accomplished along this line, as I have to make a full report within the next few days to Washington as to what has been accomplished in St. Louis.

Thanking you in advance for your kind consideration of this very important matter, I am, Yours sincerely, (Signed) Sigmond Baer, Chairman, Board of Missouri Council of National Defense, Conservation Division.

### A Letter from Harry Wedler

Editor Motor World: We enclose copy of letter which the writer received from Harry G. Wedler. We feel sure that Mr. Wedler's numerous friends in the trade will be interested in learning of his impressions of Army life.—Emil Grossman Mfg. Corp'n, L. M. Schwartz, Vice-President.

#### Here Is the Letter

My Dear Schwartz:

I am located now in my new home and occupation, and to be truthful about the affair, I like it ever so much more than I anticipated. Everybody and everything seems agreeable and pleasant. This camp is only 2 per cent military and 98 per cent mechanical. We drill only 1 hour in the morning and 1 hour in the evening. I have only drilled 2 hours the whole time I have been here, because by order of Lieut. Geo. P. Hippee (Hippee-States Co., Des Moines), I am detailed on special duty at the warehouse of automobile parts and supplies as stock watchman and sort of floor walker. (That's what they call them in department stores).

I am charged with the duty of keeping all idlers out of the place and to see that messengers carrying stock requisitions get to the proper department, served and out again with the least possible delay. I also have charge of the unloading platforms where carloads of shop machinery arrive daily. I know several sergeants here from civilian life, all of which makes it much more agreeable to me. Our meals are very good and plenty of rations served to us at tables.

The repair and mechanical shops are not yet open—waiting for machinery which arrives every day. The main building covers 15 acres, and all buildings and machinery are of the most modern type. The entire camp is very modern and new. We have German prisoners doing all the camp street work and landscaping. We will have very pretty grounds when finished.

The Y. M. C. A. is building a \$25,000 gymnasium for us with swimming pools,

billiards and pool, bowling and reading rooms. We have a nice room here now, but it is too small. They give us plenty of free shows and entertainments. Once weekly the Y. W. ladies of Atlanta come out and do all our sewing and mending and two evenings each week they join us in the shows and entertainments.

Last night the Atlanta society ladies gave us an entertainment at the Rotary Club—plenty of music, singing, dancing, ice cream, cake and coffee.

#### Reasonable Work Hours

We have reasonable work hours—8 a. m. to 11.30 a. m.; 1 p. m. to 4.30 p. m., including drill time. We have off every night from 5 to 11, and week ends from 12 noon Saturday until 7 a. m. Monday morning to go where we choose. We can sleep all day Sunday because there is no camp inspection on that day.

I am gaining weight every day. So far I have put on 7 lb. since I came here.

Mr. Alexander of Alexander-Seewald Co. is coming out some evening this week and take me out automobile riding. He gave me a handful of cigars and two packages of cigarettes yesterday, when I saw him, which is the most important thing to a soldier.

I wish you would write to me occasionally and tell me any trade or company news, as I still feel like a part of the organization and hope to be when the battle days are over.—Harry G. Wedler, Co. A., Q. M. M. R. S. No. 305, Camp Jesup, Ft. McPherson, Ga.

P. S.—We have a piano, victrola and orchestra here at camp so we have plenty of music all the time.

### Can the "Burg"?

Editor Motor World: You will note from the copy of letter enclosed herewith, which we are to-day mailing to all merchants in Galesburg, that there is a public-spirited movement here to knock the German flavor out of our city's name. We are supporting this movement. If it is possible, we would appreciate an endorsement of the idea from your paper.—Galesburg Overland Co. and Galesburg Machine Works (Service), O. R. Hardwell, Retail Sales Manager.

#### The Anti-"burg" Letter

Gentlemen: When Russia got into the war she changed the name of her capital from St. Petersburg to Petrograd in order to rid the great metropolis of that German syllable "burg."

"Burg" is distinctly German, and was originally the Hun word for *castle* or *stronghold*. To-day it is the last sound in uttering the names of many German cities, such as Hamburg, Altenburg, Augsburg, Freiburg, Regensburg, Wurzburg and hundreds of others. Do you realize the German taint in the name of our own fair city of Galesburg?

We solicit your co-operation and respectfully suggest that in future writing, printing or spelling of the name of our town that you add the Anglo-Saxon "h" like this, *Galesburgh*—just the same as the "h" in Edinburgh. Putting the "h" into Galesburg is just as important as taking the German language out of our schools.

Your endorsement of this suggestion through your advertising will be greatly appreciated by Galesburgh Machine Works and Galesburgh Overland Co.

### 76 Feet of Sales Argument



**H**AVING good sales arguments is one thing. Being able to present them to good advantage is another matter. An armful of literature is not enticing, yet the literature is important. Wherefore the Northwestern Chemical Co., Marietta, Ohio, provides each of its salesmen with one of these portfolios. When unfolded across a dealer's or jobber's desk it is 38 ft. long, and on one side shows consumer advertising and dealer helps and on the other the company's trade-paper advertising. And it weighs only 5 lb. It is a mighty convenient and attractive form in which to show the company's advertising and get maximum results from it.

# The RETAIL NEWS

## SOUTHWEST

The Elgin-Masters Auto & Truck Co., 1702 Grand Avenue, Kansas City, has been made distributor for the Elgin motor car throughout Kansas, Missouri and Oklahoma. The members of the firm are G. S. Waddell, E. Hale O'Brien, Edward G. Mura and W. E. Masters.

Harry McGee, Warrenton, Mo., will erect a new Ford garage 50 x 133, of brick and concrete, and will move into the new location as soon as possible.

C. H. LaRue, Springfield, Mo., has sold his interest in the Queen City Auto & Truck Co. to his partner, J. L. Carroll.

Charles Riggs, Avilla, Mo., has completed his new garage and will move in quarters immediately. Walter Knight will have charge.

Mason & Chapman, Macon, Mo., have moved into new quarters.

R. L. Williams, Springfield, has purchased the Yandell Motor Co., and will operate it under the name of the Liberty Motor Co. L. H. Kehoe and Frank Baum will have charge of the repairshop.

Russell and Witmer, Grant City, Mo., have purchased the Haley garage.

The Patterson Motor Co., Canton, Mo., has been bought by Wm. L. Wilson of Tilden, Ill., who has leased the garage to Simpson & Goetz.

Sidney Blankenship, Carthage, Mo., has bought the M. E. Woods garage on West Fourth Street.

Sam Barr, Rich Hill, Mo., is remodeling the building formerly occupied by the People's Elevator into a garage.

O. B. Tindell, Hamilton, Mo., has sold his tire repairshop to J. V. Mayes of near Bonanza.

Howard Blevins, Strasburg, Mo., has bought out W. C. Younger's interest in the garage.

J. L. Daniel, Caruthersville, Mo., has taken over the interests of the Weber Implement Co., which was formerly a part of the Pemiscot Motor Corporation, and will occupy the Day & Night garage building.

Andy Fost, Peabody, Kan., has moved to the building formerly occupied by C. F. Nonken & Son.

Peter Martens, Newton, Kan., has enlarged his garage by taking over the upper floors of the building and installing an elevator.

The Capper Auto Supply Co., Topeka, Kan., has increased its capital stock from \$15,000 to \$25,000.

The Kansas City Auto Radiator Repair Co., Salina, Kan., has established a branch office and shop at 114 South Fifth Street in this city.

J. N. Force, Moline, Kan., has sold his garage business to Don Morton of Elk Falls.

Arthur McCord, Americus, Kan., has opened a repairshop.

R. E. Burgener, Linneus, Mo., has sold his interest in the Burgener & Johnson garage to Dr. L. O. Home.

The Naden Tire Shop, Lyons, Kan., will erect a new building very shortly.

Johnson Bros., Canton, Kan., have purchased the Santa Fe Garage.

The Auto Storage & Repair Co., Topeka, Kan., has opened a storage and repairshop at 506 West Eighth Street.

The M. L. Meek Motor Co., Ellsworth, Kan., has leased the Golden Belt Garage from C. C. Smith and will operate it as a branch under the management of Louis Meek.

Jack Humbarger, Herington, Kan., has opened the Humbarger Tire Shop on East Main Street.

Barton Blakeslee, Independence, Kan., has moved into his new quarters in the Auto Sales Bldg.

W. H. Imes Automobile Co., Topeka, Kan., has been chartered with a capital of \$50,000 capital stock by W. H. Imes, Grace Imes and Philip Lingerfelder of Manhattan.

The Independence Motor Co., Independence, Kan., has moved into its new quarters at 211-15 West Myrtle.

Lesh & Bigley, Arkansas City, Kan., have commenced the construction of a new service station at Summit Street and Central Avenue.

A. H. Jennings & Sons, Kansas City, Kan., successors to the Northwestern Garage & Storage Co., will begin business early in July.

Charles Worley, Clifton, Kan., has bought the garage formerly owned by R. Parvin.

The Hesse Motor Co., Leavenworth, Kan., has expanded by opening a new stock room at 404-406 Cherokee Street.

A. H. Nitsch, Denmark, Kan., has bought the garage formerly operated by A. H. Errebo.

Fred E. Brown, Salina, Kan., is successor to Bragg, Norris & Co., in the garage.

Will G. Price, Wichita, Kan., will erect a garage building at 305-307 South Topeka Avenue, 50 x 140, adjoining his present location. The addition, which is a one-story brick structure, will cost about \$12,000.

Mack Welch, Edna, Kan., has purchased half interest in the Olson garage, owned by Ora Olson.

Fred C. Maas, Manhattan, Kan., has moved into new quarters at the corner of Fourth and Pierre streets.

The O. K. Garage, Burlingame, Kan., is building an addition 30 x 50 at the north end of the building.

Munis & Baker, Carthage, Mo., have purchased the Overland Garage.

George H. Seidhoff, Wichita, Kan., will erect a garage on West Douglas Avenue, to cost in the neighborhood of \$40,000.

D. J. Hyatt Garage & Storage Co., Wichita, Kan., will occupy the new \$20,000 two-story garage to be erected by O. G. Elkenberry of the Southwestern Jewelry Co. at 237 West Douglas Avenue. The building is to be of brick and concrete and 46½ x 290.

Nolan Attebury, Linwood, Kan., has sold his interest in the Linwood Garage to Lloyd Lewis.

W. K. Mann, Arkansas City, Kan., has purchased half interest in the Kinslow Motor Car Co., 116 South Summit. The firm will be known as the Kinslow-Mann Motor Co.

D. L. Wetmore, Coweta, Okla., has purchased the W. E. Simmons garage.

The Walker Motor Sales Co., Oklahoma City, has been chartered with a capital stock of \$25,000 by R. J. Walker, C. W. Crum and H. R. Grigsby.

The Franklin Garage, Davis, Okla., has been moved to Durant.

Guy Keith, Fairview, Okla., has assumed management of the A. W. Keith & Sons Repair & Auto Co.

The Hobart Tire Hospital, Hobart, Okla., has moved from Washington Street to 419 South Main Street, the former location of S. Johnson's automobile salesrooms.

The Wigton-Beck Motor Co., Nowata, Okla., has moved into new quarters.

The Service Garage, Thomas, Okla., is now managed by M. I. Neher.

The Pryor Carburetor Co., Oklahoma City, has been incorporated with a capital stock of \$60,000 by R. M. Pryor, C. C. Leach and H. W. Munson.

The Tillery Ignition Co., Enid, Okla., has moved to its new location at 109 West Main Street.

The Elk City Battery Co., Elk City, Okla., will open a Willard Storage Battery Service Station about July 1. W. H. Goodhue is the manager.

The Oklahoma Battery Service Co., Muskogee, Okla., has been incorporated with a capital stock of \$25,000 by J. H. Schmidt, W. H. Stueve, H. K. Herbert.

The J. W. Culbertson Motor Co. has been chartered with \$1,500 capital stock by J. W. Culbertson, R. L. Simpson and T. E. Ferguson.

The Northwest Ford Co., Cherokee, Okla., has moved into new quarters on Grand Avenue.

J. H. Durnil, Picher, Okla., has opened the Netta Street Garage as successor to the J. S. Mansfield garage.

Joseph Perrin, Texoma, Okla., formerly of Koshkonong, Mo., has bought out the interest in the local garage.

John Carr, Enid, Okla., has sold half interest in his garage to Mr. Anderson of Frederick, and the firm will operate under the name of Carr & Anderson.

J. W. Murdock, Frederick, Okla., has sold his garage to Kutty & Hammond.

Geo. W. Kimball, Jr., Co. of Hastings, Neb., has opened a branch battery service station at Superior, Neb.

Elliott-Myers Co., Superior, Neb., has moved into a new brick garage 100 x 135.

Geo. Cern has leased the machine shop of the Sunflower Garage, Superior, Neb.

John Atwood has bought the O.L.D. Garage from the White Auto at Fairmont, Neb.

## New Garages

Propes & Oyerly.....Mound City, Mo.  
F. C. Helmer & Co.....Brunswick, Mo.  
Scott's Garage.....Southwest City, Mo.  
Young & Warren.....Kansas City, Mo.  
Noah Leck.....Bellflower, Mo.  
Nat Hatcher.....Springfield, Mo.  
B. C. Goodson.....Hannibal, Mo.  
Morwood & Smiser, People's Garage,  
Amsterdam, Mo.  
C. R. Turner.....Galt, Mo.  
Ward's O. K. Garage.....Cherryvale, Kan.  
H. C. Dewey.....Manhattan, Kan.  
French & Freeman.....Oskaloosa, Kan.  
Harris Garage.....Hanover, Kan.  
Surlock Garage.....Chautauqua, Kan.  
McKee Bros.....Wichita, Kan.  
Earl L. Lucas.....Arkansas City, Kan.  
Safety First Garage (Case & Miller),  
Leavenworth, Kan.  
Haskins & Burnett.....Eskridge, Kan.  
McCain & Towner.....Wellsville, Kan.  
W. D. Jochems.....Wichita, Kan.  
C. W. Knotts.....Burlingame, Kan.  
L. A. Marcoux.....La Crosse, Kan.  
Keystone Garage (Bloom & Fletcher),  
Picher, Okla.  
Ed Ross & Sons.....Tecumseh, Okla.  
Tange & Mellicher (Service Garage),  
Alvin, Tex.  
Ford Garage (Keith Hudson).Granbury, Tex.



## PACIFIC COAST

**Davis-Dunn, Inc.**, Tacoma, Nash distributor, is now located in a new home at 735-37 Broadway.

**Highway Garage**, Tacoma, has obtained the agency for Overland cars in South Tacoma. New quarters have recently been completed. Egbert Merrifield, formerly with the Ford Motor Co., has purchased a half interest in the company from Edward I. Menson. A modern vulcanizing plant has been installed, and also a line of motor car accessories added.

**Northwest Auto Co.**, Portland, recently moved to its new quarters at Nineteenth and Chapman streets. The structure has been completely remodeled.

**Allen & Hebard Co.**, Portland, has been incorporated by Robert E. Allen and Lockwood Hebard, to handle accessories and tires. Quarters at 64-66 Broadway have been secured.

**Independent Tire Co.**, 1629 Westlake Avenue, Seattle, recently opened a new tire house. C. L. Diven is owner.

**Barons Motors, Limited**, Vancouver, B. C., recently incorporated for \$15,000.

**Eldridge Buick Co.**, Seattle, was recently appointed exclusive sales agent for the Northwest for the standard recording instruments manufactured by the American Taximeter Co.

**R. M. Burton Sales Agency**, Seattle, has received the agency for the "Hub Cap" demountable wheel for Fords, for distribution on the Coast.

**White & White**, Seattle, has been formed and has purchased the Ford agency of the Todd-Fett Co. in Georgetown.

**The Whitestone Tire & Rubber Co.**, Seattle, recently took the agency for the State of Washington for Mason tires and tubes.

**The Leone Dual Lighting Co.**, Seattle, has established headquarters at 921 East Pike Street, where the Leone Dual Lighting system will be distributed.

**The Overland-Pacific Co., Inc.**, Seattle, recently moved to its new quarters at Twelfth and East Pine, where the company occupies a floor space of 65,000 ft.

**The Shields-Livengood Co.**, Yakima, Wash., has opened a branch in Seattle at Tenth Avenue and East Pike Street. The company distributes the Oakland and Oldsmobile in Eastern Washington, and has recently taken over distribution of the Liberty in Washington and Idaho.

**The Northwest Oakland Co.**, Seattle, has been organized to succeed the North Pacific Oakland Co. as Western Washington distributor of the Oakland. E. M. Marks, sales manager of the old concern, recently withdrew to devote his time to Pacific Motors, Inc., and R. K. Roberts, connected with the old concern, has organized the new company.

**The Robinson-Smith Co.**, Ford dealers, Portland, recently adopted Henry Ford's plan of \$5-a-day profit-sharing wages to employees.

**Commercial Specialty Co.**, Portland, recently took the agency for the Wright one-man truck attachment.

**J. H. Graham**, Portland, Chevrolet distributor, recently closed arrangements for wholesale and retail distribution of the Case for State of Oregon. Salesrooms have been opened at Tenth and Stark streets.

**Wenatchee Produce Co.**, Wenatchee, Wash., recently opened a service station and tire house on North Wenatchee Avenue.

## MIDDLE WEST

**The Sykes Co.**, Columbus, Ohio, distributor for Gramm-Bernstein trucks and Troy trailers, which has been located at Long and Wall streets, has removed its salesrooms and service station to 118 East Spring Street.

**The Carroll-Ford-Edgar Motor Co.**, Columbus, Ohio, Ford dealer, has changed its name to Carroll-Thompson Co. Officers are J. L. Thompson, president; William S. Carroll, vice-president, and F. B. Paul, secretary-treasurer.

**William K. Lanman**, Columbus, Ohio, has started the erection of a service station 107 x 95 at the northwest corner of Capital and Lazell streets.

**The Guarantee Automobile Exchange**, Philadelphia, has been appointed distributor of the Lane truck.

**Harris F. Holland**, Indianapolis, has secured the general distributors' contract for the Lane truck for the Southwest. In addition to Indianapolis and the southern half of Indiana, he will cover Kentucky, Arkansas, Oklahoma, Texas and Louisiana.

**The McGurkin Sales Agency**, Grand Rapids, has secured the western Michigan distribution for the All-Car truck unit, manufactured by the Hudford Company, Chicago. A stock of Hudford parts will also be carried.

**I. H. Gingrich**, Grand Rapids, has moved into his new garage at 216 West Fulton Street. The new building is 50 x 90. He will have a service station in connection.

**The Kalona Motor Co.**, Kalona, Iowa, has purchased the garage from Yoder & Swartz-enrauber.

**Burt H. Winter**, St. Charles, Iowa, has purchased the Fairview Motor Co., Harris, Iowa.

**P. L. Staley**, Aurelia, Iowa, has bought the motor car repair business from Frank and Fred Hohnson.

**The J. L. Moss Rebuilt Truck Co.**, Detroit, has opened another branch in Buffalo. This is the fifth branch opened this year, the others being in Pittsburgh, Cleveland, Toledo and Chicago.

**Harry H. Henderson**, Detroit, has opened a tire shop at 80-82 Bagley Avenue.

**James Merrick**, Menominee, Mich., recently purchased a building on Holmes Avenue, where he expects to move his garage business about July 1. The entire first floor will be utilized for a machine shop.

**H. W. Johns-Manville Co.**, Cleveland, has leased approximately 25,000 sq. ft. of floor space in the A. & B. Realty Co. building. The company, for years located at 813 Superior Avenue, N. W., has taken the first three store rooms which provides an area 54 x 98, also the entire second floor, which is 200 x 98. Among other products the company handles accessories.

**The Mitchell Auto Sales Co.**, 200-220 North Henry Street, Madison, Wis., has opened a motor truck sales department and will represent the Selden.

**The Badger State Sales Co.**, Milwaukee, has been incorporated with a capital stock of \$25,000, and opened headquarters and service station at 439-441 Prospect Avenue for the distribution of the International truck. Herbert F. Krueger has been elected president and treasurer, and Milo E. Winkle secretary. The corporation succeeds a partnership of the same name which has been local retail dealer in the Oakland for a year or more.

**W. F. Schroeder**, Platteville, Wis., has been appointed representative of the Lincoln Highway Tire Co. in Grant County, Wis.

**The Appleton Auto Co.**, 732 College Avenue, Appleton, Wis., has passed into the sole ownership of J. F. Tollefson, who has taken over the half interest of R. A. Schwartzburg, and will continue the business.

## New Garages

Blodgett Automobile Co. (add., 40 x 50),  
Marshfield, Wis.  
Ideal Service Garage (add., 50 x 50),  
Hartford, Wis.  
Beloit City Garage (add., 50 x 125),  
Beloit, Wis.

Standard Oil Co. .... Marshfield, Wis.  
Denison Tire Sales Co. .... Denison, Iowa  
Thorson & Nraunaman,

Webster City, Iowa  
Nickerson & Decker .... Grundy Center, Iowa  
Standard Oil Co. (filling station),

Toledo, Iowa  
F. W. Anderson (addition). Silver City, Iowa  
Willard Storage Battery Co. .... Oakland, Iowa

## EAST

**C. E. Dean**, Philadelphia, will build a two-story stone and brick garage to cost \$4,000 at 6609 North Thirteenth Street.

**Frederick P. Bell**, Philadelphia, has purchased from Arthur Blackburn for \$7,000 the one-story garage at 1407-1409 South Forty-ninth Street.

**The Foss-Hughes Co.**, Wilmington, Del., representatives of the Pierce-Arrow, will occupy the large new garage which is to be built at Tenth and French streets by Dr. S. G. Elbert. The building, which will be of steel and concrete construction, will cover an area 112 x 109 and will cost about \$90,000.

## NORTHWEST

**The Motor Car Supply Co.**, Burlington, Iowa, has opened a salesroom and stock department at 709 Jefferson Street. W. C. Steimbacher is in charge.

**The Storage Battery Service Co.**, Davenport, Iowa, has opened a station and salesroom at 425 West Second Street.

**The Luther Land Co.**, Grand Junction, Iowa, has purchased the Gaylord Garage.

**The Harrison Motor Co.**, Hampton, Iowa, has taken the Chevrolet agency.

**George S. Pitchfork**, Muscatine, Iowa, has bought the Prest-O-Lite station.

**The Rude Auto Co.**, Perry, Iowa, has opened a branch to be styled the Rude Tire & Vulcanizing Co.

**Frank Larson**, Red Oak, Iowa, has sold his interest in the Red Oak Garage to Arthur Larson and B. Peterson.

**R. E. Poole**, Spencer, Iowa, has sold his garage to B. V. Asher.

**R. J. Gelsinger**, Storm Lake, Iowa, has bought the vulcanizing business of J. P. Schneider.

**The Omaha Liberty Auto Co.**, Omaha, Neb., is now in new quarters at 1914-16 Douglass Street.

**Hartelt Brothers**, Norwood, Minn., have been appointed distributors and will operate a service station for the Fletcher carburetor for several counties in Minnesota.

**Bentley & Weeks** have bought the garage of Guy Sherman at Cambridge, Neb.

**Arnold Brothers** have opened a vulcanizing plant at Culbertson, Neb.

**Harris & Beghtel** have leased the repair-shop of the Fritch Garage at Indianola, Neb.

**The dealers of Indianola, Neb.**, have gone on a cash basis. The following companies have signed the agreement: Service Garage Co.; Harris & Beghtel; C. R. Livingston; L. G. Trimpey and C. H. Russell & Son.

## New Garages.

Richardson Brothers ..... Britt, Iowa  
Iles & Wier ..... Davenport, Iowa  
Iowa Falls Storage Battery Co.,

Iowa Falls, Iowa  
Muscatine Auto Radiator Works,  
Muscatine, Iowa

Repass Auto Co. .... Waterloo, Iowa  
Central Garage (addition). Culbertson, Neb.

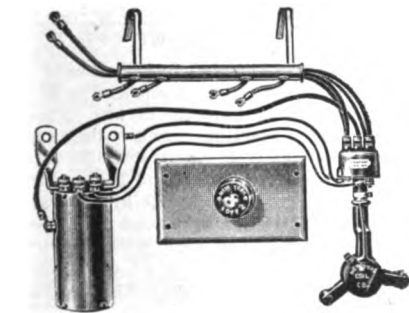
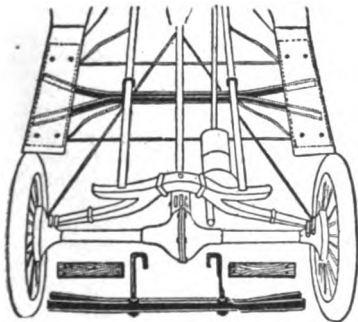
## New Truck Dealers.

Child & Anceney (Moreland),  
Salesville, Mont.  
Lincoln-Paige Motor Co. (Republic),  
Lincoln, Neb.

# Automotive Equipment

## PRESTO BODY BRACE AND RUNNINGBOARD SUPPORT FOR FORDS

A body brace and running-board support for Fords that is hung from the side-frame members. Two pieces of I-beam steel are bent into the form of an extended X and fastened together. The hanger bolts hang over the frame pieces and bolt to the brace where the sections diverge. New boards are furnished to place under the runningboards to stiffen them. Tension is adjustable by means of the bolts. Price \$3.50.—Metal Specialties Mfg. Co., 338-352 North Kedzie Avenue, Chicago.

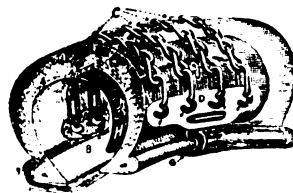
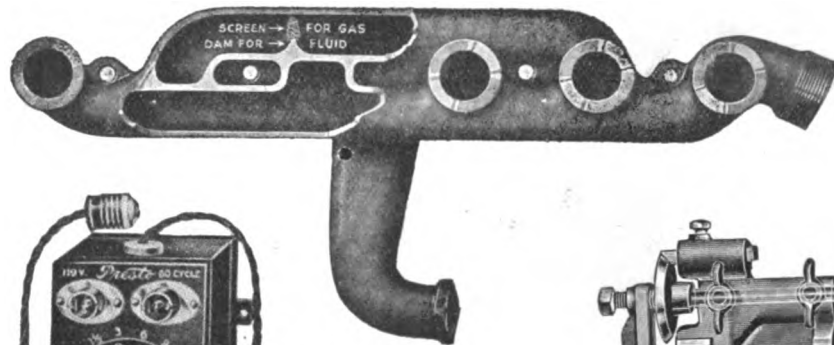


## NEW YORK VIBRATOR-LESS COIL

An ignition system for Fords, using current from the Ford magneto. The timer is displaced by a distributor and only one coil is used, there being no vibrator. A panel containing a switch replaces the Ford coil box on the dash. The system includes complete wiring. The design of the system takes into account the "dead" points in the rotation of the magneto. Price \$22.—New York Coil Co., 338-340 Pearl Street, New York City.

## SUPERIOR MANIFOLD FOR FORDS

A combined intake and exhaust manifold for Fords in which the intake passages are heated by the adjoining exhaust passages. The combustible vapor is screened before reaching the cylinders and dams in the manifold prevent liquid fuel from entering. Made to exactly replace the two Ford manifolds and is held on by the same studs and nuts. It is claimed to operate efficiently on a mixture of half gasoline and half kerosene. Price \$15.—Superior Manifold Co., Superior, Wis.

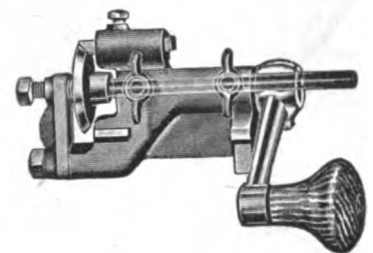


## DOBBINS BLOW-OUT CHAINS

A series of short chains held in place over the blown-out section of a tire by means of perforated plates which hook under the rim, the ends of the chains being fastened to the holes in the plates. They are attached when the tire is deflated and the broken rudder and fabric are drawn together when tire is inflated. Made in two styles, one for clincher and the other for straight side. With each chain is packed an inner patch that is to be placed directly over the hole or cut on the inside of the shoe with the

## PRESTO BULB TESTER

The Presto bulb tester is a device for testing electric light bulbs rated at 1½, 3, 6, 9 or twelve volts, using a 110-volt alternating current from the light mains. The current is transformed and reduced, the rheostat arm controlling the voltage at the sockets. Two sockets, one a single contact and the other a double contact, are mounted on the front of the case. Connection to the lighting circuit is made through a 7-ft. cord and plug. Price \$6.—Metal Specialties Mfg. Co., 338-352 North Kedzie Avenue, Chicago.



## SIOUX VALVE-REFACING TOOL

A valve-refacing tool which will reface valves of any size up to 2½ in. diameter. The stem holder is adjustable for different size valve stems and a screw holds the valve against the cutting blade, which is of hardened and tempered tool steel. The screw support swings out of the way when inserting or removing a valve. Price with 45 deg. cutter, \$6. Extra cutters, 30, 45 or 60 deg., \$1 each.—Albertson & Co., Sioux City, Iowa.



## GEISEL ENDLESS WEB FAN BELT

A fan belt made of a tough, unstretchable fabric, which is treated to make the belt hold, whether wet or dry. The joint is spliced, sewed, rubberized,

vulcanized and pressed, and is no thicker than the rest of the belt.—Otto E. Geisel, 3202 Oxford Street, Philadelphia.

## JUMBO OIL AND GREASE GUN

A combination gun adapted for light oils and heavy greases. It is made of heavy seamless brass tubing, with cork plunger and bayonet lock. Comes complete with detachable nozzle. Price \$2.—Hipwell Mfg. Co., 841-835 North Avenue, West Pittsburgh.

### VANDERPOOL 5-CAVITY VULCANIZER

A combination vulcanizer for casings and tubes, complete with quick steaming boiler with either gas or gasoline burner. The following equipment is furnished: 1 cavity 16 in. long for 2½ and 3 in. tires with 1 pair clincher bead molds, 1 cavity 18

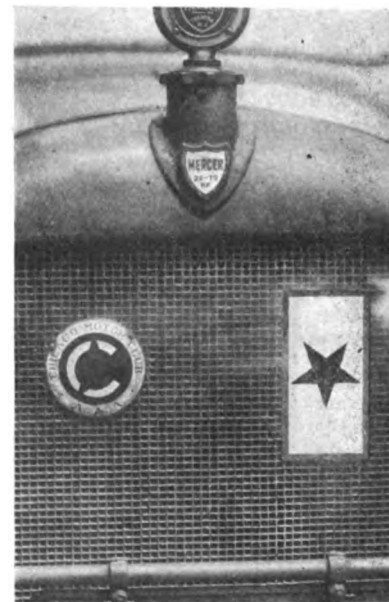
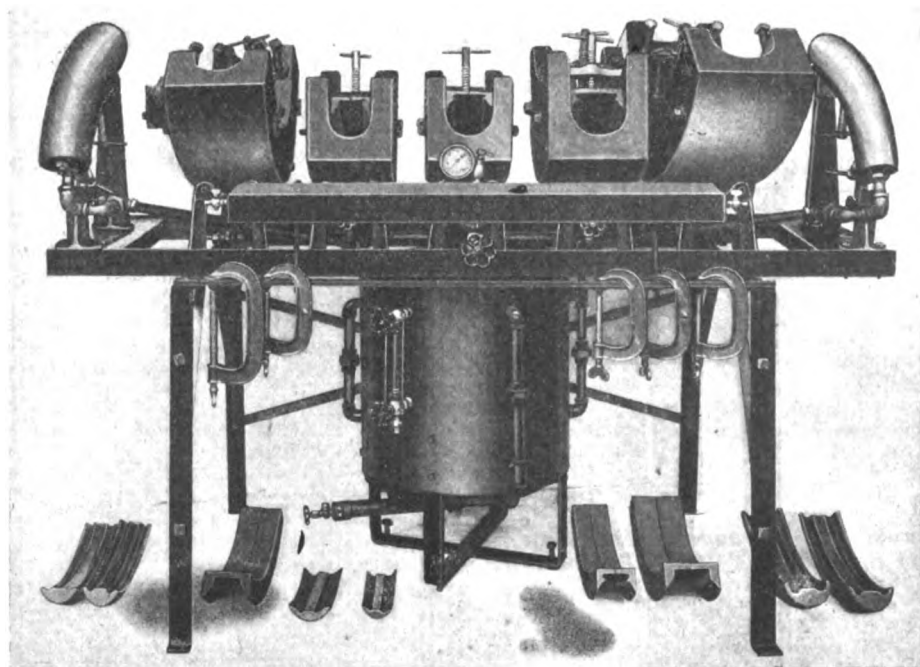
in. long for 3½ and 4 in. tires with one pair each clincher and straight-side bead molds, 1 cavity 20 in. long for 4, 4½ and 5 in. tires with 1 pair each clincher and straight-side bead molds, 36-in. tube plate with clamps, inside vulcanizer for 3 and 3½ in. tires, inside vulcanizer for 4, 4½ and 5 in. tires, 2 tread-patch molds with pads

and clamps, 2 retreading molds with cores, 18 in. combination tubular and coil boiler, etc. Weight boxed for shipment, 1400 lb. Price \$375.—Vanderpool Co., Springfield, Ohio.

### SIOUX FORD VALVE REFACING TOOL

A Ford valve refacing tool

which presses the valve against the cutter by means of a screw, the valve being turned by a handle attached to the valve stem by a set screw. The cutter is made of tungsten steel and the pressure screw and bracket drop out of the way when inserting or removing a valve. Price \$6.—Albertson & Co., Sioux City, Ia.



### RADIATOR SERVICE BADGE

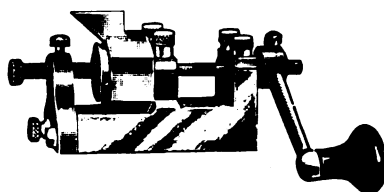
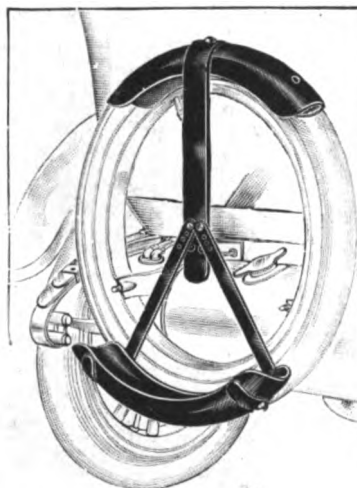
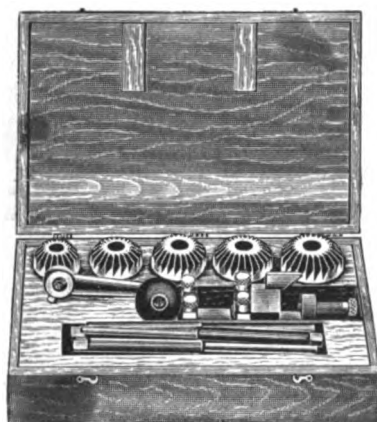
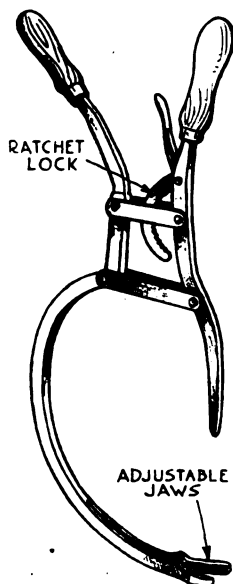
A metal service badge to be attached to the front of the radiator. It is made of sheet steel, enameled in red, white and blue, and is attached by wires which go through holes on the plate and around the radiator tubes. Price 50 cents.—L. & M. Service Specialty Co., 501 Sherman Street, Chicago.

### PYRAMID BRUSH DISPLAY CABINET

This cabinet has mahogany finish and glass front and is designed to hold about 500 Pyramid starting and lighting brushes. It measures 32 in. wide, 24 in. high and 8 in. deep and has space for 61 brush cartons. It can be placed on counter or show case without obstructing the view of stock behind it.—National Carbon Co., Cleveland.

### SIOUX VALVE-SEAT REAMER SET

A set of valve-seat reamers complete enough to cover nearly every possible size of valve seat. It includes five reamers, 1¼, 1½, 2, 2¼ and 2½ in. with 45 deg. angle (30 and 60 deg. reamers can be had if desired) and three pilot stems, 5/16, ¾ and 7/16 in. The reamers will ream out seats from 1½ to 4 in. in diameter and the pilot stems allow the use of the reamers in the three sizes of stems. Price in wooden box, \$22.50.—Albertson & Co., Sioux City, Iowa.



### MAPSON'S PERFECTION VALVE LIFTER

A valve lifter made of soft steel without moving parts and designed to operate without bending valve stems. A ratchet

device locks automatically and holds the valve spring in the position desired. Jaws are adjustable to fit any size spring retainer, the adjustment being effected by a set-screw. Price \$5.—Mapson Mfg. Co., 4064 First Street, San Diego.

### TWO-THREE TIRE CARRIER

A tire carrier that increases the capacity of the existing tire carrier already on the car. The top hangs over the top of the tire on the other carrier and the bottom which supports the tire extends outward in the opposite direction. Can be disassembled and folded up when not in use. Made in sizes to carry tires from 30 x 3½ to 39 x 5½ in. at prices ranging from \$3.50 to \$6.—International Stamping Co., 400 Leavitt Street, Chicago.



# Rules for 1918 Tractor Demonstrations

## *Competitive Features Eliminated and Results Will Not Be Made Public*

CHICAGO, July 8—All competitive features will be eliminated in the National Tractor Demonstration at Salina, Kan., July 29-Aug. 2, although provision is made for any individual manufacturer who desires to have tests made, which will be official as far as he is concerned. The results of the tests will not be announced by the association but will be the property of the exhibitor alone and may be published as official by the exhibitor if he so desires.

Doubtless some tests will be made and the results will be valuable as far as they go, but they will not be made public, as the tractors at Salina will be working practically under uniform conditions and tests would indicate something about their relative efficiency.

The rules and regulations for the demonstration July 29-Aug. 2 have been made public by the National Implement & Vehicle Association through the tractor demonstration committee of the National Tractor & Thresher Manufacturers' Auxiliary and are reproduced herewith.

1. Public demonstrations shall begin at one o'clock and end at three, unless other hours are announced by local committee at least twenty-four hours before starting time. Private demonstrations may be held in the forenoon from eight o'clock to eleven-thirty.

2. No exhibitor shall be allowed more than one tractor of each size and type on the field during the public demonstrations doing the same kind of work. He may have one or more machines performing different operations, namely, one plowing, one disking, one seeding, etc.

3. Size of land for each tractor exhibitor for plowing demonstrations will be determined by the average number of plow bottoms pulled, the width of plows and speed of machine as given in company's catalog. Each tractor exhibitor must plow out dead furrow to its left.

4. All plows on any given gang must be set at the same depth and kept there during the day's demonstration. This depth will be announced daily by General Manager. (Plows found operating otherwise will be ordered from the field for the balance of the day's work.)

5. All exhibitors will be allotted land in the same field or adjoining fields during each day's demonstration. Land for private demonstrations will be provided daily, in one field or adjoining fields.

6. In all public demonstrations the motor or tractor must not be run at more than 10 per cent above its catalog plowing speed. Tractors may be run on high gear with normal engine speed when disking, harrowing, seeding, etc.

7. Positions on field first day will be arranged by lot, in following manner:

Drawing to take place at 10 A. M. Monday, the opening day of demonstration, by serial numbers representing total number of exhibitors.

Position on field, for the first public demonstration will be according to numbers, starting 1, 2, 3, 4, etc.

The total number of exhibitors will be divided into same number to divisions A, B, etc. "A" will occupy preferred position on first day public demonstration, and "B" preferred position on second day, etc.

Exhibitors who do not have representatives at drawing, the drawing will be done for him under direction of the General Manager.

Each exhibitor will be required to finish his land daily in a workmanlike manner, an assistant in plowing the end lands as directed by the General Manager.

8. Each field plowed will be surveyed and staked ready for afternoon demonstrations.

These fields will be tested for the drawbar pull of a 14-inch plow, plowing at the specified depth previous to the demonstration. All manufacturers will be furnished information relative to drawbar pull so they can better determine the number of plows to use on each gang.

9. Each tractor shall bear a placard, to be furnished by the chief observer, showing the brake horsepower of the engine, the revolutions per minute, the plowing speed in miles per hour, and the kind of fuel used and its Baume test. Tractors using more than five per cent of gasoline shall be classed as burning gasoline and be so placarded.

10. All tractors on the demonstration field belonging to one exhibitor must be kept on or along the land allotted him for that day's demonstration, until the hour designated by management for returning to headquarters.

11. No machine will be allowed to operate with special equipment other than that designed for practical use with same. No spectacular methods will be permitted on the part of salesmen or others to attract crowds. The demonstration must speak for itself.

12. Each tractor exhibitor will have the privilege of burning any kind of fuel he desires, but no one will be permitted to burn fuel of higher gravity test than that used by his competitor burning the same kind of fuel. All exhibitors will be required to obtain fuel from one source, such to be designated by General Manager.

13. No time will be required of exhibitors to make movie pictures or group photographs for commercial purposes. Manufacturers can arrange to get photographs during the demonstration if they desire. Any manufacturer or representative of farm or trade papers, or news agency will be allowed to have their official photographer on the grounds to get pictures for their own use.

14. Manufacturers will be privileged to make brake horsepower, drawbar pull, and such other efficiency tests as they desire. All such tests desired should be reported to the General Manager not later than July 15, so that sufficient number of Prony brakes, dynamometers and other apparatus can be provided. These early announcements will also be necessary in order that suitable number of competent judges and sufficient acreage can be provided for all who desire to make tests.

15. The results of all tests made at the demonstration shall be furnished to the exhibitors only and such exhibitors may publish the results as official from the management of the demonstration. No official report of any tests made will be kept by the General Manager, judges or the association except by permission of the exhibitor making the tests.

16. Manufacturers will be privileged to exhibit not more than two belt-driven machines in connection with their exhibition.

17. Arrangements will be made for daily demonstrations showing use of tractors harrowing, disking, seeding, and other farm operations, demonstrating general utility of the tractor. The rules governing these demonstrations will be the same as those applied to plowing.

18. The interpretation and enforcing of these rules shall be left to the Local Manager of each demonstration and the General Manager of the Demonstrations.

19. Each company exhibiting at these demonstrations shall appoint one manager, who will be expected to report to the General Manager not later than 8 o'clock each morning for instructions and information regarding the day's work. This Manager of Exhibits will be held accountable for the work of his company and no instructions will be issued to any one else, nor will requests, instructions, or complaints be recognized from any one but this Exhibit Manager. He shall wear a badge furnished him, specifying his being official Exhibit Manager.

20. Each exhibitor will be expected to keep plows, tractors, etc., around his tent arranged in first class order, and the land allotted him for exhibiting purposes free from circulars, rubbish, etc., such as will be distributed around headquarters daily. They will also be expected to use care at all times in operating machinery with respect to its safety for all visitors. The management will appreciate co-operation of these Exhibit Managers in all matters.

21. Each entrant will sign the rules and thereby agrees to live up to the rules and co-operate with the committee in every way to make the tractor demonstration a success.

22. The field manager shall have authority to order from the field any machine whose operator does not comply with the rules, and, further, any exhibitor who is manifestly disregarding the rules will not have land laid out or furnished for him on the succeeding days, or until such time as he has met the conditions.

23. No exhibitor joining the National Demonstration will be permitted to exhibit until he has given correctly the price that he is in position to furnish tractors at regular production, the correct weight of tractors, and all data pertaining to their construction and rating, minimum and maximum speed at which the motors are to run, and the committee have the right to have any such machines placed under test to prove the correctness of the data that is furnished.

### **\$50,000,000 Shell Contract for Studebaker**

SOUTH BEND, IND., July 8—According to information received from an authoritative source, the Studebaker Corp. has been given shell contracts by the Government which will amount to \$50,000,000. A telegram received here states that the corporation is assured all shell business it can handle for the next two years at least, and that the Government is building the shell plant for Studebaker and bearing all the expense. The plant will be turned over to Studebaker at the end of the war if the corporation so desires. It is understood that 4000 additional men will be employed. Three building permits have been issued for the erection of buildings to cost \$270,000.

### **Dealer Goes Into Farm Light**

ST. LOUIS, July 8—The Lalley-Brockman Farm Light Co., St. Louis, has been incorporated by Philip H. Brockman, president of the DeLuxe Automobile Co., to handle the Lalley Light distribution, which is growing too rapidly to be handled as a side line. R. J. Williams, who has been connected with carbide light sales here, has been made manager. The warerooms will be at 3118 Locust Street. The DeLuxe company distributes the Oldsmobile.

### **Cincinnati Automotive Dealers' Organize**

CINCINNATI, July 6—The Cincinnati Automotive Association has been organized and a large majority of dealers, garagemen and supply people have united with the organization, which has become affiliated with the Ohio Automobile Trade Association. Officers have been elected as follows: President, H. H. Brenner; vice-president, S. A. Wright; secretary, Ralph N. Curl, and treasurer, R. R. Wooley.

### **Overland Adds More Buildings**

TOLEDO, July 5—The Willys-Overland Co. is building additions costing \$307,430 to its Toledo plant. The largest addition is to be a 300-ft. one-story structure costing \$225,000, to be fitted as a machine shop for making 8-in. shells under a new contract recently awarded the company.

# Make the Debtor Pay

*New Accounts Are Lost Because the Customer Is Made to Meet His Obligations, and the Dealer Who Doesn't Pay His Jobber Is Merely Heading for the Rocks*

**C**OLLECTING debts is one of the mildewed problems of business. The manufacturer, jobber or dealer who finds his delinquent accounts a big problem has discovered nothing new. Shakespeare made the delinquent debtor famous with his Shylock story.

In probably all agricultural territory 75 per cent of the new garagemen in the business come from the farm, either mechanics, farmhands, or sons of farmers or the farm owners who have sold or rented their farms. It takes these new dealers nine to twelve months to use up the money with which they started. They are first rate credit for this period. Then the jobbers can afford to watch them closely.

The Ayres-Farmer Co., St. Joseph, Mo., which has been in business a little over two years, has learned something. One of these things is that it must keep after the dealer and make him pay up promptly within thirty days of the contracting of the debt. (*The firm has learned that very few customers are lost because they are forced to pay their bills.*) No bill now is allowed to run over thirty days beyond the month when it was due. About the middle of the month following the due date the treasurer starts out to get the money in. About the middle of July, for instance, letters will be sent on bills that should have been paid the 10th of July.

## When To Draw on Dealer

If the middle-of-the-month letters don't get results the firm draws on the dealer. The previous letters have notified the dealer that he will be drawn on. The notification is given in a pleasant way, perhaps by saying that lots of men prefer to pay at the bank, it being less trouble to meet a draft than to fix up a letter and check to send to the creditor.

There are exceptions, of course, to all rules, but those exceptions are only when the credit department believes that the money is dead sure without a draft. A growing tendency is evident in this company to draw the salesmen in on the collection of bills and especially on the investigation of delinquents.

The company had many delinquent bills a few months ago. It cleaned practically all of them up by means of notes, putting the customer-dealers on a strict 2-10 basis on their current business.

Customers were then urged to take full advantage of the discount.

The company has observed that if debts are not cleaned up by September or October they are pretty sure to run through the winter. Last fall, therefore, the company made a special effort to get all the debts cleaned up so that it would not have to carry the dealers several months.

Murphy has found that the letters to delinquents have to fit each case, some being couched in nice language, others being as rough as the occasion may demand. A strictly form letter does not answer for the circulars nor for the personal urging.

One letter sent out by Murphy, Feb.

## The Fighting Dad

By Rufus T. Stroh

(*Issued as a bulletin by Isaiah Hale, Commissioner of Safety of the Santa Fe railroad, by permission, and distributed over the entire system.*)

*I used to think, when I thought at all,  
Success was a wad of money,  
Or a front-row seat in a senate hall,  
Or a king's crown—ain't it funny?  
But my eyes are open now, an', say,  
It's the gospel truth I'm writin',  
The one safe brand of success to-day  
Is to win the war we're fightin'.*

*We can save our gold, we can lay it by  
Like the hoardin's of the miser,  
But we'll never spend it, you an' I,  
If we fail to trim the Kaiser.  
My blood runs hot, and I feel it burn,  
An' my temper gets to squirmen',  
To think of handin' the dough I earn  
To a flat-faced, square-toed German.*

*I don't give a cuss for a holiday  
Or the old established hours;  
I've sold my watch, an' I work away  
To the limit of my powers.  
I'm the fightin' dad of a fightin' son,  
An' here on the job I'm stickin'  
Till the things we're battlin' for are won  
An' we've handed Bill his lickin'.*

*An' so I'm strivin' as best I can  
To avoid such circumstances,  
By doin' my work like an honest man  
An' takin' no foolish chances;  
For I've got a youngster over there  
Who counts on me as his backer,  
An' since he's willin' to do his share,  
I'm damned if I'll be a slacker.*

19, brought particularly good results. One debtor sent in a check for \$128.77 by return mail. Another of the several debtors who responded owed \$3.23; he sent five cents extra for interest. This man told Murphy he should be a poet instead of a credit man, but endorsed the sentiment with a big "Amen." Following is this particularly effective letter sent out by Murphy:

"Dear Sir: We are obliged to remind you of your December account amounting to \$3.23, which is now past due. No doubt this is just an oversight on your part, but we trust you will check up your account with us at once and mail check for the amount, as we are badly in need of the money.

"The finest thing a man can have

Is credit at the store.

It is a balsam and a salve

For every mortal sore.

The customer who pays his debts

When due has shining fame.

'He is the best of all good bets,'

The merchants all exclaim."

## Old Troubles Easily Adjusted

KANSAS CITY, July 8—The Kansas City Motor Car Dealers' Association is extending the fullest co-operation to all branches of the industry in bringing about the most effective and the smoothest operation of the cash feature of the conservation program. It is felt that with the backing of a definite statement from government authorities of the desirability of this procedure, and with formal letters inviting co-operation from the national concerns, arrangements can be made whereby local representatives can settle bills when work is done.

The problem of insurance companies apparently offered special difficulties—which difficulties were dissipated as the discussion got at the facts. It was pointed out that the service station, for instance, has no contract with the insurance company as a rule when a car is brought in by the insured for repairs. The owner has such a contract. Hereafter the practice in Kansas City will be to have a clear understanding with owners that owners are arranging for repairs and will pay the bills.

This proposed practice will eliminate delays in payment due to postponed adjustments and avoid also risk of loss in case where owners neglect or omit to transmit the money received from insurance companies.

# Elimination of Odd Tire Sizes Will Cause Little Trouble to the Trade

*Sizes to be Discontinued This Fall are Almost Obsolete and Manufacturers' and Dealers' Stocks Will Provide Supplies for a Year*

NEW YORK, July 9—The announcement last week of the program of the War Industries Board, eliminating certain sizes of tires in groups covering a period of 2½ years caused a flurry of excitement and speculation as to how demands for these sizes were to be met.

A compilation of cars affected disclosed the fact that the sizes to be discontinued Nov. 1, 1918 are not used on any 1918 models on only three 1917 models and about nine models from 1913 to 1916.

Practically every model affected has been discontinued by car manufacturers, so that the only problem is one of supplying these sizes to users until the cars wear out or until such time as the few remaining cars will have had their wheels changed to conform to the standard sizes.

The stocks of these tires on hand and to be made in the next 3½ months will be more than sufficient to provide for the demand for a year. Even after these stocks have been exhausted it will be possible to substitute straight-side tires on clincher or QD rims by using a bead filler strip to fill in the clinch.

It is estimated that there will be hardly one car in a thousand that will have to have its wheels changed to fit the new conditions.

The further eliminations to take place on Nov. 1, 1919 and 1920, will be provided for in the same way, as any cars now manufactured using these sizes will be changed at once by the car manufacturers to conform to the eventual standard sizes.

Tire manufacturers are not planning to rush a large number of the sizes to be discontinued through the factories so that they will have large stocks on hand as that would defeat the spirit of the conservation measure and beside there is no need for it. One maker stated that there had been only 42 of a certain discontinued size sold in the last year. This must have represented tires used on 4 to 5 cars allowing two sets of tires to a car in a year.

L. A. Silberbauer, New York Branch Store Manager of the Fisk Rubber Co., stated that in his opinion the elimination of the odd sizes would enable every one to get the tires they needed by cutting out the tires that must be held in stock for long periods of time before they were sold. He thought that when all the rubber was turned into tires that would sell quickly, it would not be necessary to have such large stocks of tires in the branches and agencies and that therefore the curtailment in the importation of rubber would not be felt to an appreciable extent.

SIZES	To Be Continued	Discontinued Immediately	Discontinued Nov. 1, 1918	Discontinued Nov. 1, 1919	Discontinued Nov. 1, 1920
28x3 30x3 32x3 34x3		28x3† 30x3 S.S., Q.D., S.S. 32x3† 34x3†			30x3 Cl.*‡
28x3½ 29x3½ 30x3½ 31x3½ 32x3½ 33x3½ 34x3½ 35x3½ 36x3½	30x3½ Cl. 32x3½ S.S.	28x3½† 29x3½† 30x3½ Q.D. 31x3½† 33x3½† 34x3½† 35x3½† 36x3½†	30x3½ S.S.* 32x3½ Q.D., Cl.*		
30x4 31x4 32x4 33x4 34x4 35x4 36x4 37x4 38x4 40x4 42x4	31x4 Cl. 33x4 S.S.	30x4† 31x4 S.S., Q.D. 32x4 Q.D., Cl. 34x4 Q.D., Cl. 35x4½ Q.D., Cl. 36x4† 37x4† 38x4† 40x4† 42x4†	33x4 Q.D., Cl.* 35x4 S.S.		32x4 S.S.*‡ 34x4 S.S.*‡
29x4½ 32x4½ 33x4½ 34x4½ 35x4½ 36x4½ 37x4½ 38x4½ 40x4½ 41x4½ 42x4½	34x4½ S.S.	29x4½ Q.D., Cl. 38x4½† 40x4½† 41x4½† 42x4½†	29x4½ S.S.* 32x4½ Q.D.* 33x4½ Q.D.* 34x4½ Q.D.* 36x4½ Q.D., S.S.‡ 37x4½ S.S.*	33x4½ S.S.‡ 35x4½ Q.D.* 36x4½ S.S.*	32x4½ S.S.*‡ 33x4½ S.S.*‡ 35x4½ S.S.*‡
33x5 34x5 35x5 36x5 37x5 39x5 41x5 43x5	35x5 S.S.	33x5 Q.D., Cl. 34x5† 35x5 Cl. 36x5† 37x5 Cl. 39x5† 41x5† 43x5†		37x5 Q.D.*	33x5 S.S.*‡ 35x5 Q.D.*
36x5½ 37x5½ 38x5½		36x5½† 37x5½† 38x5½†			
36x6 37x6 39x6 41x6	36x6 S.S.	36x6 Q.D., Cl. 37x6† 39x6† 41x6†			
38x7 40x8	38x7 S.S. 40x8 S.S.	38x7 Q.D., Cl. 40x8 Q.D., Cl.			

\*Non-skid tread. ‡Plain tread. †All types of bead and tread.

Tire dealers are enthusiastic over the order and anticipate smaller stocks, quicker turnovers and greater profits from the smaller investment. They see no obstacle in the way of the order and say that the few cars that will be affected can easily be changed to use standard size tires by changing the rims or changing the wheels.

## Solid Tires to Be Standardized

AKRON, July 8—At a recent meeting of the War Service Committee, division of Solid Tires, the following classification of pressed-on solid tires was adopted tentatively:

Class "A" Permanent Standard	Class "C" To be discontinued Nov. 1919	Class "D" To be discontinued Nov. 1918	Class "E" To be discontinued at once
32 x 3½	32 x 2½	42 x 5	34 x 7
34 x 3½	32 x 3	34 x 6	34 x 8
34 x 4	34 x 3	42 x 6	40 x 8
36 x 4	36 x 3	42 x 7	34 x 10
34 x 5	36 x 3½		42 x 10
36 x 5	32 x 4		36 x 12
40 x 5	38 x 4		42 x 14
36 x 6	40 x 4		
40 x 6	38 x 5		
36 x 7	38 x 6		
36 x 8	38 x 7		
36 x 10	40 x 7		
40 x 10			
40 x 12			
40 x 14			

Although the above classification has not been finally adopted, it is entirely probable that it will be at a later meeting, the definite date of which has not been announced.



# Store Door Delivery For New York

## *City To Be Divided Into Zones and Incoming Freight Delivered Under Supervision of Drayage Director*

**N**EW YORK CITY, July 8—The greatest step yet taken to eliminate the serious l. c. l. railway freight terminal congestion in New York City was made here to-day by James S. Harlan, Interstate Commerce Commissioner, who outlined a plan for the delivery of all l. c. l. freight direct from the terminals to the consignees without the formality of any notices of arrival. At first the plan contemplated handling only the incoming shipments and these will be delivered to the consignees on their dates of arrival and stored in public warehouses if the consignees refuse to accept them and pay the freight and delivery charges when they are delivered at their doors.

The entire mercantile district of the city will be divided off into zones and all the trucks delivering the freight will leave from the various terminals with full loads to be delivered in one of the zones. Each truck used in the work will be registered and will be under the supervision of a city drayage director who will have general supervision and control for the consignee of the trucking of freight from pier or freight station after it has been placed on the pier or freight station floor by the carrier.

Only registered trucks will be used to deliver the goods and full loads will be carried by each truck when it leaves the freight station or pier. This procedure will greatly increase the efficiency of the trucks in the service and make possible motor truck delivery from the piers at which even horses heretofore were unprofitable in some instances on account of the extremely long delays, at some times as great as 60 hours, in getting onto the piers so that the loads would be picked up.

It will also prohibit empty trucks from driving up to the pier for one small case of goods and of blocking the entire line of vehicles while the driver is inside trying to discover his lone package from among great piles of freight going to all sections of the city.

The plan is the most far-reaching one which has ever been proposed to solve the pier and freight terminal congestion in all of our large cities. After the many details have been worked out and the system perfected in New York City, it is intended to extend the operation of the system to all other cities of the United States.

The system as proposed may be put into effect in this city by Aug. 15, 1918, and will prevent consignees from utilizing railroad cars, piers and freight stations as warehouses by taking advantage of

the 48-hr. demurrage-free period heretofore in effect.

It will also separate the handling of the incoming and the outgoing goods and in this way relieve the congestion which has been caused by vehicles trying to deliver goods and get goods at the same pier at the same time. By freeing the incoming stream of goods, it is expected that the freight jam which existed in New York last winter and backed up traffic as far west as St. Louis will be made impossible.

Although for the present, the system is to be only applied to incoming shipments, Commissioner Harlan believes that in the natural course of events, the many benefits will result in its being extended to include a pick-up service for outgoing goods. The whole system is to be largely self-governed and there probably will be a carriers' committee, a shippers' committee and a draymen's committee for the purpose.

The plan has the approval of William G. McAdoo, Director General of Railroads, and it is entirely possible that after the many details of the system have been worked out, the supervision of the delivery vehicles may be given over to the four express companies now consolidated and merged into the American Railroad Express Co. That large organization with its representatives at almost every freight and pier terminal in the country should be able to carry out the plan on the largest possible scale and at the least possible cost.

The provisions of the plan as approved by Mr. McAdoo follow:

1—All that part of Manhattan Island that lies south of Fifty-ninth Street shall be designated as a drayage district. Team tracks within that area shall not be regarded for the present as being in the drayage district.

2—No notice hereafter shall be given to the consignee of any freight arriving at a pier within the drayage district, and no free time shall be allowed. All inbound carload and less than carload freight on arrival shall be handled immediately to the store door of the consignee.

3—A drayage director shall be appointed who shall have general supervision and control, for the consignees, of the trucking of freight from pier or freight stations after it has been placed upon the pier or station floor by the carrier.

4—There shall be a drayage supervisor at each pier who, under the control of the drayage director, shall have general authority over the removal of inbound freight from the pier floor or platform.

5—The salary of the drayage director and the several drayage supervisors and other necessary assistants, together with their nec-

essary operating expenses, shall be paid out of a fund contributed by the carriers serving the metropolitan area on a tonnage or other satisfactory basis determined by them and the drayage director. The drayage director and drayage supervisors, however, shall be appointed by the Director General of Railroads, or under his authority, and shall report to and be responsible to him.

6—The drayage zone south of Fifty-ninth Street shall be divided into delivery zones having relation to their proximity to the piers and the density of their traffic. Inbound freight as far as possible shall be distributed by the carriers on the pier platforms or floors by delivery zones, but when practicable shall be delivered immediately from the car to the trucks operating in the zone to which the freight is destined. Inbound freight shall be delivered to consignees only in trucks registered with the drayage director, and all trucks so registered shall be under the full authority of the drayage director. No trucks other than those so registered shall be allowed upon the piers for the removal of inbound traffic, except under special permit issued by the drayage director. For good cause shown the drayage director may cancel the registration of any truck, and his decision shall be final.

7—The drayage director, as far as possible in the conduct of the drayage service, shall utilize the equipment of existing trucking and teaming organizations and of shippers. Special equipment shall be utilized as far as possible in the handling of the special commodities for which they are designed.

8—The drayage director shall make such rules and establish such regulations as will facilitate the prompt removal of freight, making only such exceptions in the use of equipment as may be in the public interest. The drayage director shall make all necessary rules and regulations for the bonding of the owners of trucks used in the drayage service and respecting the methods of collecting the freight and drayage charges. As at present, the delivery of freight by the carriers to the consignee will continue to be effected on the pier floor or platform and its responsibility for loss or damage will remain unaffected by the consignees' drayage service herein provided. The drayage director will make all necessary rules and regulations defining the responsibility of truck operators for loss of or damage to freight while in their custody.

9—Delivery of freight shall be made to the consignee at the usual place for delivery at street level, and when a consignment so tendered is refused or when the payment of the legal freight and drayage charges is refused, the freight may be stored in a public warehouse at the cost and expense of the consignee and as a lien upon the consignment. The drayage director shall designate the warehouses to be used for this purpose.

10—The drayage director shall make such rules and establish such regulations as will tend to build up the gathering of freight by the registered trucks for outbound movement.

11—The drayage director shall have power to make a schedule of rates and charges for the drayage service, including the charges for undue detention of a truck by a consignee at the point of delivery, and to change the same from time to time as conditions may require. He shall also have the power to fix the hours during which consignees must be prepared to receive freight.

12—The drayage director shall have power, should it become necessary in his opinion, to extend the drayage service to the docks of such water lines as are parts of the transportation system under the control of the Director General of Railroads.

## Limit Use of Coal for Passenger Car Making

**Manufacturers to Be Allowed to Use Only 25% Regardless of Quantity in Storage**

WASHINGTON, July 8—Passenger car makers will be allowed to use only 25 per cent of the coal allotment of the 1917-18 period in the 1918-19 period, regardless of the quantities of coal they have purchased now and stored away.

Manufacturers engaged in war and passenger car manufacture will receive 100 per cent coal supply for war work, but will be allowed the 25 per cent allotment only for passenger car manufacture.

Many of the manufacturers have made expenditures of money, used considerable space for storing large quantities of coal this spring, in the anticipation that the Fuel Administration would allow them to use all the coal they buy now for passenger car manufacture next winter.

The above ruling was made by F. W. Noyes, Director of Conservation of the United States Fuel Administration to Motor World to dispel these hopes. It was pointed out to the Fuel Administration that:

(a) The Administration requested manufacturers to buy their coal now to relieve the railroads next winter.

(b) Many manufacturers heeding this request are making expenditures of money and using important factory space to store the coal.

(c) Many manufacturers are securing enough coal to provide them with a 100 per cent allowance for passenger car use.

(d) Other manufacturers are not heeding the request of the Government to buy coal now. It would be a great injustice if the Administration refuses to allow those manufacturers with foresight who buy their 100 per cent coal needs now to use the full coal allowance next winter.

(e) It would be a great injustice to the foresighted and patriotic manufacturer who buys his coal now and who devotes an outlay of money and use of space for that purpose, to be forced next winter to either have their coal lie idle or be obliged to divide it with those manufacturers who do not display the foresight and are not willing to spend the money or use the necessary space to buy coal now.

Regardless of the injustice, and regardless of the fact that manufacturers that buy their coal now are only heeding the United States Fuel Administration requests, the above rulings were made by Director Noyes.

### Government Aircraft Corporation

WASHINGTON, July 8—The bill demanding the organization of a Government-owned aircraft corporation proposed recently by Senator Chamberlain, and told of in a past issue of Motor World, will probably pass Congress.

This bill, which calls for the creation of a corporation directing production of aircraft equipment or materials, will be formed under the laws of the District of Columbia with a capital stock of \$100,000,000. According to Congressman Kahn, one of the chief objects of the corporation will be efficient division of spruce to the Allies. Great Britain takes one-half, France one-sixth, Italy one-eighth and the United States one-fourth of the output, and it is believed that the corporation should be organized, and each of the Allies be put upon debentures of this Government for the amount of labor they are receiving from it so that when the time of settlement arrives nations will get returns from their salvage in proportion to the stock they are allotted in the corporation. The United States Government will at all times be the majority stockholder, and the minority stock it is proposed will be sold to the various allied governments.

The corporation will to some extent purchase all the existing plants now manufacturing aircraft, but it is anticipated will in the main co-operate with existing plants rather than purchase them or build new ones. The corporation, which will be under the control of the Aircraft Production Board, will be similar to the Emergency Fleet Corporation, and will function with regard to the production of airplanes as the Emergency Fleet Corporation operates in regard to building ships.

### Community Labor Boards

WASHINGTON, July 8—Community labor boards to supervise recruiting and distribution of labor will be established in each industrial region of the country by the United States Employment Service. They will apply the federal labor policies as the local draft boards put into operation the selective construction act. Employees and employers will select representatives for these boards to insure adequate representation. There will be one representative for employers, one representative for employees, and three representatives for the United States Employment Service. The members of the boards will be appointed by the state directors of the U. S. Public Service Reserve assisted by chambers of commerce and manufacturers' associations, who will nominate industrial management representatives, and state and city federations of labor which will nominate the labor members.

### Government Has Trained 12,000 Men

WASHINGTON, July 8—More than 12,000 men have been trained for the United States Army through the war trading division of the Federal Board for Vocational Education. Six thousand of these were trained in mechanical lines, 5000 in radio work and 1000 for clerical occupations. It is estimated that an additional 3000 men have been trained by private agencies through impetus given to the work by the Federal Board, using Federal Board courses of vocational instruction.

## Not All Must Recruit Labor Through Bureau

**Only Those Employing Over 100 Need Get Workers Through The Government**

WASHINGTON, July 8—Amending the original labor program, the Department of Labor states that for the present, only manufacturers engaged on war contracts and employing over 100 workers will be required to recruit unskilled labor through the United States Employment Service after Aug. 1. Non-war industries will be affected only indirectly in so far as they must not offer superior inducements, prevent the transfer of workers urgently needed for war production or in any way attempt to compete with the Government for labor.

The following 5 classes of labor need not for the present be recruited through the U. S. Employment Service although of course the machinery of the Employment Service is available to all employers:

1—Labor which is not directly or indirectly solicited.

2—Labor for railroads except in so far as the Director-General of railroads has or may recruit, that recruiting shall be exclusively through the United States Employment Service.

3—Farm labor, which will be recruited through the Department of Agriculture.

4—Labor for non-war work.

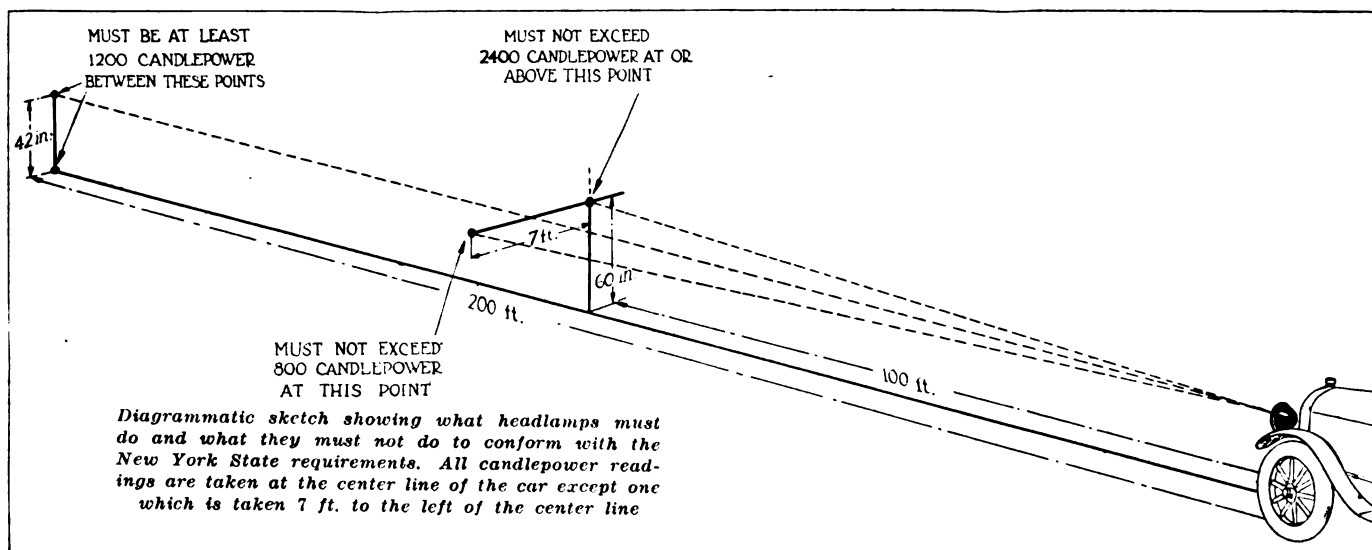
5—Labor for establishments in which the maximum force including the additional number recruited does not exceed 100 employees.

### More Fordsons For Herring

DES MOINES, July 8—C. L. Herring, Des Moines Ford distributor who has handled the Fordson distribution for Iowa and parts of other states, has closed a new contract with Henry Ford to distribute 5000 Fordsons in Iowa, South Dakota and Nebraska. The first contract was on a basis of 1600. An increase of \$100 over the price asked at the original distribution through the state counsel of defense is announced effective at once.

### Edwards Out for Himself

PHILADELPHIA, July 10—William F. Edwards, who has been sales manager for the Goodrich-Lenhardt Mfg. Co., this city, has taken the distribution of the Goodrich-Lenhardt products for the entire West. He will make his headquarters in Chicago and will cover his territory personally. The line includes Goodrich lock switches, motor testing valves, steering column locks, Ford timers, Ford ignition assemblies, Ford brake shoes and Globe steel tool and battery boxes and other specialties.



# New York Develops Standard Method For Testing Headlamps

## *To Make Laboratory Tests of Anti-Glare Devices and Certify Approved Ones—The Requirements*

NEW YORK, July 8—After months of preparation and following extensive testing and consultation with the Society of Automotive Engineers and the Society of Illuminating Engineers, a standard method of testing glare eliminating devices has been developed by Francis M. Hugo, Secretary of State of New York.

It is a method which eliminates mere opinions and substitutes a solid foundation of scientific facts for the indisputable classification of headlamps under two divisions: (1) those that glare; and (2) those that do not glare.

The New York State law which makes compulsory the elimination of glare provides also for the testing of headlamps by the Secretary of State. The Secretary of State, following a conference between makers of glare eliminating devices and representatives of the S. A. E. and the Society of Illuminating Engineers, has laid down the following specifications to which devices must conform to be acceptable:

- 1—The candlepower must be at least 1200 at a distance of 200 ft. in front of the car and at a point between the roadway and 42 in. above it.
- 2—The candlepower must not exceed 2400 at a distance of 100 ft. in front of the car and at a point 60 in. (or any higher) above the road.

- 3—The candlepower must not exceed 800 at a distance of 100 ft. in front and 7 ft. to the left of the center of the car at a point 60 in. above the road.

So far as is known, New York State is the first of the many with headlamp regulating statutes on their books to enact a law providing for measurement tests according to recognized and exact methods. The laws of other states merely provide the usual necessary illumination of objects 200 to 250 ft. in front of the car; that no direct light beams be apparent 42 in. above the roadway 75 ft. in front of the car; and that objects 10 ft. at the sides and 10 ft. ahead be revealed. No provision for scientifically testing devices to so control headlamps have been enacted.

The action of New York State in this respect is of great importance to dealers, garagemen, repairmen and car owners all over the United States for it seems altogether likely that a similar method of making standard tests soon will be adopted in many other states.

The decision to require standard candlepower tests has not been made hastily or without careful study. For months the Headlamp Division of the Society of Automotive Engineers has been working on this problem in conjunction with a similar division of the Society of Illuminating Engineers. Sev-

eral months ago the Society of Automotive Engineers conducted an extensive test on a public road in New York City, the results of which probably for the first time placed the whole matter of glare on paper in black and white and applied science and mathematics to a problem which heretofore has not been approached in any such thorough manner.

According to the provisions of the New York State law, a manufacturer of headlamp glare eliminating devices may submit samples to the Secretary of State for testing. These will be tested according to a standard method and with instruments which are standard and have been developed for this specific purpose. If the devices conform to the specifications previously mentioned, a certificate to that effect will be given the manufacturer. If the devices cannot be made to conform to the specifications using the standard bulbs prescribed by the specifications but are O. K. with bulbs of another candlepower, the device may be passed with corresponding limitations.

Any manufacturer of glare eliminating devices may submit samples of his product to the Secretary of State for testing. The law provides a fee of \$50, payable to the Secretary of State, for the work.

Although the law does not specifically say so, it is presumed that police officers



will be furnished with lists of duly approved devices giving the name of the device and the candlepower bulbs that may be used with it. Then, if an officer believes that a specific pair of headlamps does not conform with the law, inspection of the device used and a comparison of the name of the manufacturer

with his list should suffice. If some doubt exists, as it might if bulbs too large were being used, or if the headlamp brackets had been bent, it may be that provisions for testing lamps locally will be required.

Following is the complete text of "Specifications for Headlight Tests":

## *Text of Specifications For Headlight Tests*

### **General Conditions of Acceptability**

For the purpose of test, the intent of the New York State law dealing with automobile headlights and providing that front lights shall be so arranged, adjusted and operated, as to avoid dangerous glare or dazzle, and so that no dangerous or dazzling light, projected to the left of the axis of the vehicle when measured 75 ft. or more ahead of the lamps, shall rise above 42 in. on the level surface on which the vehicle stands, such front lights shall be sufficient to reveal any person, vehicle or substantial object on the road straight ahead of such motor vehicle for a distance of at least 200 ft., is deemed to be complied with if the following conditions are fulfilled:

1. Any pair of head lamps under the conditions of use must produce a light which, when measured on a level surface on which the vehicle stands at a distance of 200 ft. directly in front of the car and at some point between the said level surface and a point 42 in. above this surface, is not less than 1200 apparent candle power.

2. Any pair of head lamps under the conditions of use shall produce light which, when measured at a distance of 100 ft. directly in front of the car, and at a height of 60 in. above the level surface on which the vehicle stands, does not exceed 2400 apparent candle power, nor shall this value be exceeded at a greater height than 60 in.

3. Any pair of head lamps under the conditions of use shall produce a light which, when measured at a distance of 100 ft. ahead of the car and 7 ft. or more to the left of the axis of same, and at a height of 60 in. or more above the level surface on which the vehicle stands, does not exceed 800 apparent candle power.

### **Conditions of Laboratory Test**

In order to determine whether any particular device conforms to these requirements it shall be subjected to laboratory tests according to the following specifications:

#### **Number of Samples**

Two pairs of samples of the device submitted shall be subjected to test. In the case of front glasses the sample shall be of 9/16-in. diameter, when practicable.

#### **Reflectors and Incandescent Lamps**

The reflectors used in connection with the laboratory tests shall be of standard high-grade manufacture of 1.25-inch focal length, with clean and highly polished surfaces and as nearly truly paraboloidal in form as practicable, and as approved for this purpose by the National Bureau of Standards.

The incandescent lamps used in connection with the laboratory test shall be of standard high-grade manufacture and as approved for this purpose by the National Bureau of Standards.

#### **Adjustments by Manufacturers' Representative**

The manufacturer of the device shall be given due notice of the date and place of

test. Manufacturers' representatives present at the test shall be privileged to adjust their devices in any way which represents an ordinary and legitimate adjustment, including tilting the lamps or reflectors, which can be carried out by purchasers of the device, or such adjustment may be made by the laboratory expert acting on the instructions of the manufacturer. The character of the adjustments so made shall be carefully noted and stated in the report as manufacturer's adjustment.

### **Tests**

The tests shall be as follows:

Test 1. Four-point test of pairs of samples.

A pair of testing reflectors, mounted similarly to the head lamps on a car, shall be set up in a dark room at a distance of not less than 60 ft. nor more than 100 ft. from a vertical white screen. If a testing distance of 100 ft. is taken the reflectors shall be set 28 in. apart from center to center, and if a shorter testing distance is taken, the distance between reflectors shall be proportionately reduced. The axes of the lamps shall be parallel and horizontal, or as tilted in accordance with manufacturer's adjustment. The intensity of the combined light shall then be measured with each pair of samples in turn, with the reflectors fitted with a pair of each of the following types of incandescent lamps, in turn.

(1) Vacuum type, 6-8 volts, 17 mscp., G-12 bulb.

(2) Gas filled type, 6-8 volts, 20 mscp., G-12 bulb.

The lamps shall be adjusted to give their rated candle power. Measurements shall be made at the following points at the surface of the screen.

A. In the median vertical plane parallel to the lamp axes, on a level with the lamps.

B. In the same plane one degree of arc below the level of the lamps.

C. In the same plane one degree of arc above the level of the lamps.

D. Four degrees of arc to the left of this plane and one degree of arc above the level.

In an acceptable device both pairs of samples shall conform to the following specifications for observed apparent candle power:

Points A and B. At at least one of these points the apparent candle power shall not be less than 1200.

Point C. The apparent candle power shall not exceed 2400.

Point D. The apparent candle power shall not exceed 800.

Provided, however, that if the test indicates that a device which is unacceptable with either of the test lamps will come within the specifications with lamps of another candle power or of the other type, the device may be passed with corresponding limitations as to the incandescent lamps to be used in connection with it. Test 2. Complete test of single sample.

A single sample taken as an average representative of the device as manufactured shall be submitted to a complete test with a

vacuum incandescent lamp of 17 candle power, 6-8 volt rating, in a G-12 bulb. This test shall show its light distribution characteristics by actual measurements made according to recognized and exact methods.

### **Distribution of Samples**

One pair of the samples submitted shall be retained by the testing laboratory for purpose of future reference and as samples of construction, and the other pair shall be returned to the office of the Secretary of State.

### **Report**

The report of the tests shall be rendered in duplicate to the Secretary of State and shall be signed or initialed not only by the expert making the test, but also by an executive officer of the institution making the test.

It shall include a statement by the testing laboratory as to whether the device when properly applied substantially complied with section 286 of the Highway Law and shall suggest the maximum candle power to be used with the same, and as to the other conditions necessary in the operation of the device, in such a way that it will comply with the requirements of this specification.

—Francis H. Hugo, Secretary of State.

### **Willys Suggests Arm Signals**

TOLEDO, July 6—John N. Willys, president of the Willys-Overland Co., has suggested that the National Automobile Chamber of Commerce recommend for universal national adoption three simple road signals, which will increase the safety of traffic. Willys suggests arm pointing up, turn to the right; arm straight out, turn to the left; arm down, slow down without turning. These signals have the advantage of common use by a large number of drivers. They are the most natural signals and the easiest to remember. They have already been adopted by a number of local automobile clubs.

### **Plummer Drops the Liberty**

NEW YORK, July 8—The Owen Magnetic Motor Sales Corp., which handles the Owen Magnetic car in the Metropolitan territory, is hereafter to handle the Liberty as well. The Liberty has been handled by the Colonial Motors, Inc., of which John F. Plummer was president. Plummer has entered government service and the company has been dissolved.

### **185 Reo Speed Wagons for Canada**

LANSING, MICH., July 6—The Reo Motor Car Co. will deliver under contract to the Canadian government 185 Reo Speed Wagons, eighty-five of which will be used for ambulance purposes. For ambulance work the government buys only the chassis, fitting on its own especially made ambulance bodies. The remaining part of the contract will be used for general transportation purposes in hospital work. The Speed Wagon ambulances will transport wounded men from the transports to hospitals in the interior. The delivery of the Reo Speed Wagons will mean 400 such vehicles now in government service in the Dominion.

# News of the N. A. D. A.

## N. A. D. A. "Takes Well"

ST. LOUIS, July 8—"The National Automobile Dealers' Association idea has been accepted by the trade and the necessity for a well directed, consistent campaign for the protection of the motor car interests is now so well recognized that it is merely a question of getting to the dealers," said President F. W. A. Vesper of the association before he left last night on a trip in which he expects to meet and talk to 1700 motor car dealers. He will be accompanied by Executive Secretary E. E. Peake, and he predicts that Peake will return 100 per cent memberships from each of the three meetings.

President Vesper left here to go to Flint, Mich., for the Buick annual meeting. After leaving there he will go to Cleveland, where he expects to address 300 north Ohio dealers July 9. Next comes the Indiana state meeting at Indianapolis July 10. More than 600 dealers are expected to be present. At Minneapolis he will talk July 12 before the joint meeting of dealers of Minnesota and the Dakotas. More than 1000 members are expected to be present.

"Just as an idea of how the N. A. D. A. idea is getting hold," said President Vesper, "this incident will show. In the current mail came a check from a dealer near Philadelphia. In his letter he said: 'I had been under the impression that a dealer to join the N. A. D. A. must be affiliated with some local association. An article in the current Motor World showed me my mistake and I hasten to enclose my check for \$15.'"

"This dealer and numerous others realize the need of the work, and they are beginning to realize that the National is talking for them, but there are hundreds that we must reach directly where there is one who will write a letter like the above. That is now our problem."

After leaving Washington President Vesper stopped in New York, Pittsburgh and other cities on the way home, and he says: "Really, I was amazed at the spirit of those meetings. I had not realized until then how well the idea was getting home."

Last week Robert E. Lee, secretary of the Dealers' Association in St. Louis and also the Accessory Association, went to Kansas City to speak to the Motor Car Section of the Rotary Club national meeting. There were 150 dealers present and, after talking on general lines, Lee presented the cause of the N. A. D. A. and what it is accomplishing in the way of legislation and other helps for the trade. He asked for memberships and got 100 per cent of those who had not already sent in their checks.

The War Service idea is taking a tighter grip constantly, and while there are occasional reports that certain

dealers, oil stations or service shops will not join, they are usually brought into line easily. A letter from President Vesper's office to the dealer whose line is handled by a tire service man usually brings that man to time. Some national tire companies are forestalling such letters by sending notices to their dealers that they must close or be dropped from the lists.

Oil jobbers have been appealed to and have without exception promised to cut off stations that do not "come into the U. S." The large oil companies give little trouble. Here and there a local manager believes that he cannot afford to close up, but he quickly changes his mind when the home office hears of the decision. In some instances it has been reported that a local manager with a better idea of patriotism has taken charge.

In St. Louis it is reported that the Sunday and holiday closing has brought a minimum of hardship to car owners. This point has been carefully investigated for the N. A. D. A. office to assure other cities where the move is contemplated that it will not work a hardship. St. Louis closed all supply and oil stations on 24 hours' notice without complaint from car owners. Dealers assert that their telephone calls to regular customers brought the answer that "we had seen the papers."

"People are reading these days," said a local tire man, "and you can't put anything over on them. They are looking for just such moves and are right up to the minute. This thing could not have been done a year ago but it is a mere trifle to put it over now."

## Members Towing In Members

ST. LOUIS, July 8—More than 400 membership applications were received at the N. A. D. A. office last week. Brooklyn, N. Y., sent a 100 per cent list of the local association membership, 23 dealers, with checks. Other cities where the applications centered were Pittsburgh, La Crosse, Wis.; Hutchinson, Kan.; New York City; Harrisburg, Pa., and Philadelphia. Several of these cities reported that their lists would be 100 per cent within a very short time, but that they did not hold back the names to send all of the list at once.

John O. Shuford, president of the St. Louis Motor Trade Accessory Association, wired from Cape Girardeau, where he went to address a meeting of dealers, "that all southeastern Missouri dealers had heartily approved of the War Service regulations, and extended compliments to the N. A. D. A. for effective work."

In some sections of the country there still are dealers who doubt that the program for conservation outlined by the

War Service Board has the approval of the Government. One of the N. A. D. A. workers met such a dealer, and to convince him man wired to the War Economics Board. The reply, through error, was sent to the N. A. D. A. offices here and promptly forwarded. The reply was signed by Melvin T. Copland, secretary of the Conservation Division of the War Economics Board, and ought to settle any doubts. It read:

"Program for economy in the retail automobile business was drawn by the War Service Board at our suggestion. Details of program were determined by the committee and approved by the commission. We are in sympathy with its purpose, obviously of importance—labor, material and equipment must be saved in every practical way to aid in carrying out the war program."

## Rotary for the N. A. D. A.

KANSAS CITY, July 8—"Rotary" has promised its unconditional support to the conservation program of the National Automobile Dealers' Association, and to the association's membership campaign. The automobile dealers' section of the international convention in Kansas City last week was occupied chiefly with discussion of the national association's work.

There were 43 Rotarian motor car dealers present from almost that many states of the Union. Thirty of these were already members of the National Automobile Dealers' Association, and the remaining thirteen signed applications and checks at the meeting. R. C. Greenlease, vice-president of the Kansas City Motor Car Dealers' Association, was chairman of the section. The Rotarians resolved that they would push the projects of the National to the utmost in their localities.

## Move Against Private Garages

PHILADELPHIA, July 7—The city government has determined to fight the cutting up of pavements and sidewalks to facilitate entrance to private garages. Councils has just passed an ordinance to this effect and has already sent out a gang of workmen to tear up and relay the pavement in front of the property at Fifty-first Street and Larchmont Avenue, to get rid of the slopes in the sidewalk. Hundreds of other driveways similarly arranged are scattered about the city, affording easy entrance to private garages through sideyard approaches and to improvised garages located in the cellars and basements of houses. There is now pending before the city solicitor an opinion as to the disposition of all such private driveways, the plan being to have the city do the work of rehabilitation, but collect from the property owner.

## Fulton of Philadelphia Moves

PHILADELPHIA, PA., July 5—The Fulton Truck Co. of Philadelphia has moved to its new sales and show building at 2330 Market Street.

## South American Dealer Expects Bright Future

**But Just Now He Has His Own  
Troubles—Gasoline Sells  
at 90 Cents**

BUENOS AIRES, ARGENTINA, May 20—Shipping conditions are the greatest problem that the Argentine distributors have to cope with to-day. There is the difficulty of the Argentine merchant getting ships to move his products and added to this the export tax that the government levies on all goods exported. Notwithstanding this situation, the good crops of the past season have done much to overbalance the bad conditions following the railroad strikes which began last November. Business conditions are not what they should be, which is partly due to the export situation, and also to the restricted imports. Many stocks of goods are being rapidly absorbed and prices are increasing every day the same as in the United States.

The automobile distributors in Argentina are coping as well as they can with these generally unfavorable conditions, and are looking forward to increased shipments of automobiles, trucks and accessories from America. It is hoped that good shipments will be forthcoming in October so that the coming summer selling season which begins in November will be favorable.

The numerous strikes have not been without their favorable side and during the past 10 months, which has been the period of strikes, the automobile distributor has had the opportunity of demonstrating to the Argentine public that the automobile is a practical and essential vehicle. Some of the more enterprising distributors sent cars all over the country and were able to get a great deal of propaganda out of this. Studebaker was one of the leaders in this movement.

Gasoline is now selling at 90 cents a gallon, which, taken in conjunction with the high price of tires, has materially increased the cost of operating a car. The scarcity of gasoline has had a depressing effect, but there are assurances that the United States will supply all that is necessary. Lower powered cars and those economical in fuel are bound to have greater selling opportunities than those which are heavy consumers of gasoline and are heavy users of tires. Shipments of gasoline reaching Argentina before October, or even during November and December, will have a very beneficial effect on the sale of automobiles during the coming spring and summer.

### First Wolverine Truck Out

DETROIT, July 8—The first Wolverine 1½-ton truck of the American Commercial Car Co. is expected on the market the last of this week. The retail price will be \$1,825. The company was organized last year by H. C. Wiedman and associates who purchased a large manufac-

turing plant at the corner of Gratiot Avenue and the Detroit Terminal Railroad, comprising about 5 acres of ground together with three large factory buildings and machine shop equipment. The officers of the company are as follows: H. C. Wiedman, president and general manager; Fred Kahl, vice-president; George P. Good, secretary, and O. F. Kulewatz, treasurer. The company plans on building 200 trucks this year.

## War Benefits

WASHINGTON, July 6—The one delivery per day plan for retail stores advocated by the War Industries Board and adopted in 30 cities has enabled them to operate with a saving of 40 per cent in motor trucks. Eliminating the return of merchandise to not more than 3 days, reducing the amount returned, elimination of special deliveries, and the single daily delivery plan has combined to produce this result. In the 30 large cities, truck driver and helper organizations have been reduced 35 per cent. In 30 small stores in several towns in one eastern state the number of truck drivers and helpers has been reduced from 116 to 55.

### American Motor Truck Sold

DETROIT, July 8—The American Motor Truck Co. was sold at auction June 27 by the Detroit Trust Co., receivers for the company. The sale brought in a sum of approximately \$32,000. The personal property was sold in divided lots for \$22,000. The real estate, represented by an equity in a contract, was bought by Frank Bros. for \$10,000; the purchaser will assume payments on the unpaid balance. The entire contract is worth \$35,000, on which \$17,000 had been paid. The book liabilities of the company total \$50,000. This does not include the unliquidated claims. After these are filed it is believed the total will reach much in excess of \$75,000. The defunct company had been in operation only a short period—about a year or so—and it is said that only ten trucks were built during that time.

### Here's the Hotel Garage

NEW YORK, July 8—Hotel men representing a number of the largest hosteleries in the city, such, for example, as the Waldorf-Astoria, McAlpin, Claridge, Plaza, Ritz-Carlton, etc., are interested in the erection of a mammoth garage to care for the cars of hotel guests. A company has been incorporated under the style Inter-State Garages, Inc., and it is planned eventually to have a garage in all the principal cities in the country. The company has obtained a city block bounded by Forty-seventh and Forty-eighth Streets on Second Avenue, with a frontage of 250 ft. and extending 350 ft. on the side streets. It is planned to provide an individual locked space for each car, the total capacity to be 863 cars. There will be no elevators, ramps being used to reach the five floors of the building.

## South Africa Is Poor Field for Tractor Now

**Oxen Are Too Cheap With Gasoline  
at \$1 a Gallon—Future  
Sales Likely**

CAPE TOWN, SOUTH AFRICA, May 10—Any attempt to sell gasoline farm tractors in South Africa to-day will meet with heavy resistance because the price of gasoline is \$1 per gallon, which makes it prohibitive for farm cultivation. Kerosene is selling at half this price, but if the wear and tear on an engine burning kerosene is greater than that using gasoline, and the same efficiency is not obtained from kerosene it is a problem to see how it will be economical to use kerosene.

That a tractor is pretty expensive to operate here in addition to the fuel cost is evident because of the great use of oxen for agricultural purposes. The farms are so large in area that it costs scarcely nothing to feed the oxen so that farm cultivation with them is cheap no matter how much they are used. Many farmers consider oxen a good investment even if they are only worked a few days of the year and the remainder of the time are kept grazing.

While the South African farmer will continue to use oxen for many years to come there is certain to be an opening for a suitable farm tractor at the conclusion of hostilities in Europe. There are several South African distributors who are giving personal investigation to the tractor situation, and while they do not expect actively to take up sales for some time they feel certain that the day of the tractor in South Africa is sure to follow the closing of the war. Large farmers are certain to take on a few for experimental purposes, and these will form the beginning of the tractor business.

### England Co-ordinates Transportation

LONDON, ENGLAND, June 19—After Sept. 1 no person in England will be permitted to use a vehicle for the transportation of merchandise on the highways except in accordance with the terms of a permit granted by the Road Transport Board. This is one of the first tangible steps in the complete co-ordination of the vehicles on the highway system.

The official order known as Road Transport Order 1918, issued June 4, specifies that all persons owning or having under their control any vehicle used for the transportation of merchandise by highway shall before July 31 make a return on the prescribed blank, giving details of the vehicles, their load capacities, and the work for which they are normally used.

The only exception to this order is agricultural vehicles and horse-drawn vehicles having a load capacity of less than 1680 lbs.

# Farm Tractor News

## Pennsylvania Farmers Want State Tractors

PHILADELPHIA, July 6—Numerous requests from farmers in all sections of the state, especially in Lehigh and adjacent counties, for the services of the state's tractors, of which there is a battery of 35 of seven different makes, are coming in for the fall plowing. A new schedule is being made out at Harrisburg to place the machines in various districts.

Careful inspection of all farms making the request will be made before the fall contracts are signed. Several city business men have arranged to have farms which have not been operated plowed for wheat on a community basis. While the tractors owned by the state are earning their upkeep on custom work for the farmers, many of the machines are being used in the country districts for hauling road scrapers and split-log drags.

In scraper work the gasoline tractors are said by the Department of Agriculture to do a third more work a day than those steam-propelled, and with the split-log drags each tractor performs as well as six teams of horses. Farmers who have used the state tractors are enthusiastic over what has been already accomplished.

### Canada Expects 25,000

OTTAWA, July 6—"I hope you are proceeding with your arrangements on the basis of 25,000 visitors." Thus concludes a letter from J. Lockie Wilson, managing director of the Ontario Plowmen's Association, in reference to the international tractor match to be held at Ottawa, Ontario, Oct. 16, 17 and 18.

The event is going to be more than a plowing match. It will be as big and as varied as its title indicates. Its official designation is the "International Plowing Match, Tractor and Farm Machinery Demonstration."

It will be the biggest and most largely attended plowing match ever held in Canada. It will be a gigantic exhibition of agricultural machinery of all descriptions, all set up and in operation, on the Experimental Farm.

Seventy-five acres of the Experimental Farm and 100 acres of the Booth Farm adjoining will be required to hold the contests and to maneuver the many tractors and gang plows which will be demonstrated. This land is fine level country, and splendidly suited for the purpose.

All manufacturers of tractors in America are being communicated with, and favorable replies are being received from all quarters.

There will be various classes of contests, both for horse-drawn and tractor plows. There will be a class for tractors owned by farmers and tractors owned by

manufacturers and driven by their employees.

R. B. Faith, editor of the Ottawa Farm Journal, is executive secretary of the local management board, which comprises D. D. Gray, of the Experimental Farm; F. C. Nunnick, of the Conservation Commission; W. L. Chauvin, Angers, Quebec; William Hodgkins, M. L. A., Shawville; Stewart McClenaghan, representing the Ottawa Board of Trade, and a representative to be named by the City Council. A grant of \$500 has been made by the city; Carleton and Leeds counties are each contributing \$100, and other counties likely will make grants at the June sessions of council. The Ottawa Farm Journal is donating a handsome cup for the best plowman in eastern Ontario.

Earlier in the fall county matches will be held under the supervision of the district representatives of the Ontario Department of Agriculture. In this way the competitors for the honors at the big meeting in Ottawa will be chosen.

### Austin Adds a Tractor

CHICAGO, July 6—The F. C. Austin Corp. has for some time been developing a farm tractor which it expects to start production on this fall, and to build in quantities. This company has for years been a large manufacturer of road machinery, the manufacture of which is continuing, but a new factory is being built for tractor production. Technical details are not available, but it is expected the tractor will sell somewhere between \$1,600 and \$2,000.

### California Orders 2500 Fordsons

DEARBORN, MICH., July 6—The state of California, through W. M. Hugson, a Ford dealer, has placed an order for 2500 Fordson tractors. This is the largest order ever placed by any State. Louisiana, Mississippi and Oregon have each ordered 1000 Fordsons. According

to the contracts the orders must be filled within 1 year dating from July 1, 1918. Hereafter no contracts will be accepted for state distribution for less than lots of 1000. Henry Ford & Son produced 113 tractors yesterday and 110 the day before. The company expects to bring its daily production up to 125 during the current month.

### Two More Fordson Distributors

ST. LOUIS, July 8—The Lafayette Motor Car Co., 1645 South Grand Avenue, has been appointed Fordson tractor distributor for 44 counties in eastern Missouri, and the Bagley Motor Co. of East St. Louis has been appointed distributor for southern Illinois. These firms each last week received an exhibition tractor. The tractors were placed on exhibition in the respective warerooms Friday and Saturday. Each announced a work demonstration in the near future.

### Lapeer Tractor Plant Ready

LAPEER, MICH., July 6—The new plant of the Lapeer Tractor-Truck Co. was completed last week. It is a two-story structure, 60 x 200. Machinery is being delivered and the plant is expected to be completely equipped within the next 2 weeks. The capital stock of the company is \$100,000, practically all of which has been subscribed by Lapeer people. The officers of the company are: President, J. W. H. Tucker; vice-president, C. W. Smith; secretary, E. E. Mix; treasurer, R. T. Carpenter.

### Find Emerson Guilty

NEW YORK, July 6—The Emerson Motors Co., Kingston, N. Y., and four of the brokers who sold its stock have been convicted by a jury in the federal district court for using the mails to defraud. President George A. Campbell, his son George Campbell, who is treasurer, George B. Gifford, a director, and Will H. Stetson, a promoter, were found not guilty. All of these individuals, as well as the Emerson company, were tried on an indictment of 13 counts, 12 for using the mails to defraud and one for conspiracy.

## Fordsons Did Well in England

LONDON, ENGLAND, June 20—The circulation of derogatory reports with regard to the performance of Fordson tractors is heard from time to time, and it is unfortunate that these continue to receive attention in many places. Those who are circulating these reports are in complete ignorance of the success of the Fordson in the government trials.

Persons circulating such reports must be ignorant of the exhaustive tests to which these tractors were submitted before the British government permitted itself to purchase 6000 of them. Circu-

lators of these reports must also be ignorant of the success this tractor achieved in the competitions arranged by the Food Production Department.

These people are apparently not aware that these tractors worked 24 hours a day in actual plowing before the government decided to purchase them.

The best answer to the suggestion that the Fordson is not successful when using kerosene for fuel is the fact that these tests were accomplished on kerosene, and the British government after exhaustive trials has continued to use kerosene as



the fuel in all of the Fordson tractors. Six acres were plowed in 44½ hours with a consumption of 1.84 gal. of kerosene per acre. This was made under official observation. The gallon referred to is the British Imperial gallon, which is one-fifth larger than the American gallon.

#### Skilled Workers Are Needed

WASHINGTON, July 6—War industries of the United States are to-day short between 300,000 and 400,000 unskilled workers. The shortage of workers in the coal mining industries is said by the Department of Labor to be imperiling all other war production. The situation is considered so serious that the United States Employment Service, which assumes control of unskilled labor on Aug. 1, is endeavoring to complete its machinery so that relief may be given even before that date. Skilled labor is also facing a serious shortage. One of the largest munitions plants turning out heavy caliber guns is short 2000 machinists. The war plants of Connecticut and Maryland are alone facing a shortage of 35,000 machinists. The solution, according to the Department of Labor, lies in the recruiting by the United States Employment Service of workers for war work from non-war industries as quickly as possible.

#### 4495 Training Planes Delivered

WASHINGTON, July 6—Four thousand four hundred ninety-five elementary training airplanes were delivered to the United States Government by manufacturers in this country up to June 8. Eight hundred and twenty advanced training airplanes were delivered up to Jan. 8. This information together with other data was submitted to Congressman S. H. Dent, Jr., by Secretary of War Baker this week. The further information regarding aviation included: the average weekly production of advanced training planes during April was 22; during May, 45½; week ending June 8, 78.

To June 8, 286 combat planes were delivered. The weekly average of this type of machine in April was 5; in May, 38; week ending June 8, 80.

More than 2000 Liberty engines have been delivered to the Army and Navy. The average weekly production in April was 96; in May, 143, and in the first week of June, 115.

Thirty-seven thousand two hundred and fifty machine guns were delivered for use on airplanes before June 8.

#### Seven Trucks in a Drive-Away

MENOMINEE, MICH., July 6—The Menominee Motor Truck Co. sent seven trucks over the road last week to a seaport in Maryland, the drive-away being about 1200 miles. The trucks consist of three 1-ton, three 2-ton and one 2½-ton. Each of the 2-ton trucks carries one of the 1-ton trucks, while the 2½-tonner carried the bodies of the 1-ton trucks. It will probably take from 12 to 14 days to get to destination. Under favorable weather conditions the trucks will travel about 100 miles a day.

## 19 Entries Ready for National Tractor Show

List for Demonstration at Salina, Kansas, July 29-Aug. 2, Filling Rapidly

NEW YORK, July 5—Fifteen manufacturers of farm tractors and four makers of plows and other implements have reserved space for the National Tractor Farming Demonstration which is to be held at Salina, Kan., July 29 to Aug. 2. It is expected that the list will be lengthened from week to week, and that the accessory exhibition will be even more comprehensive than has been the case in the past. Following is the complete list of exhibitors to date:

#### Tractors

Avery Co. ....	Peoria
Square Turn Tractor Co. ....	Chicago
Hart Parr Co. ....	Charles City
Holt Mfg. Co. ....	Peoria
Nilson Tractor Co. ....	Minneapolis
Moline Plow Co. ....	Moline
Dauch Mfg. Co. ....	Sandusky
Parrett Tractor Co. ....	Chicago
Russell Co. ....	Massillon
Gile Tractor & Engine Co. ....	Ludington
Advance Rumley Thresher Co. ....	La Porte
Aultman & Taylor Machine Co. ....	Mansfield
Rock Island Plow Co. ....	Rock Island
Gray Tractor Co. ....	Minneapolis
La Crosse Tractor Co. ....	La Crosse

#### Implements

P. & O. Plow Co. ....	Canton
Oliver Chilled Plow Works. ....	So. Bend
John Deere Plow Co. ....	Moline
Grand DeTour Plow Co. ....	Dixon

#### Automotive Accessory Distributer Starts

DETROIT, July 8—The Automotive Sales Co. has been incorporated here and will conduct an automotive manufacturers' sales agency, with offices at 554 Book Building. W. L. Mack, formerly sales manager of the Shakespeare Co., Kalamazoo, Mich., is president. A. H. Doolittle, for the last 3 years sales manager for the Zenith Carburetor Co., Detroit, is treasurer and manager. The company will sell entire factory outputs and handle all factory sales of the Shakespeare company, Copeman lubricating system and Connecticut electric clock, as well as several other automotive specialties.

#### "Business Touring" Recommended

PHILADELPHIA, July 5—The Automobile Club of Philadelphia, which is predicting that this summer there will be an unusual amount of touring because of the rise in rail passenger rates, and curtailment of rail schedules, urges that more attention be given to road maintenance and cites the advantages of "business touring." Men of large affairs, it is maintained, are learning by experience that there is often economy of time and greatly increased efficiency in making the necessary trips by road and less by rail. There is the opportunity of

combining business and relaxation, quite necessary to the high mark of efficiency, and attention also is called to the large amount of travel between training camps and other subdivisions or the country's military establishments, as well as to munition plants and shipyards.

#### Leavenworth Organizes

LEAVENWORTH, KAN., July 5—The automobile dealers as well as the garages and accessory shops of this city have formed a temporary organization, the Leavenworth Automobile Dealers' and Accessory Men's Association.

Al Evans, Dodge dealer, is temporary chairman, and W. G. Leavel is temporary secretary. The association members went on a cash basis July 1 and are closing their establishments at 6 p. m. each day and all day Sunday and holidays. It is the purpose of the associated dealers to operate their business along metropolitan lines, and at a later meeting they will decide whether to maintain a central service station for emergency work after hours. Every dealer but one is in the association.

#### Copper Price Put at 26 Cents

WASHINGTON, July 6—The price of copper has been fixed at 26 cents per lb., an advance of 2½ cents from the former price of 23½ cents per lb. This price is subject to the approval of the President. It goes into effect immediately and will continue until Aug. 15.

#### Emergency Service in Philadelphia

PHILADELPHIA, July 6—While the automobile trade has ruled to close garages, motor accessory shops and repair stations from 6 p. m. until the following morning, as well as over Sundays, it is explained by A. E. Maltby, president of the Philadelphia Automobile Trade Association, that it is not intended that motorists who meet with minor accidents during restricted hours shall not receive repairs. Emergency service can be given without preventing proper observance of the ruling.

#### 67,000 More Cars in Pennsylvania

PHILADELPHIA, July 6—The last number on the licensed tags issued June 30 was 324,476. There were 319,498 pneumatic tired vehicles registered, or 67,710 more than last year. The type ranging from 20 to 35 horsepower shows the greatest advance. Solid tired vehicles—trucks—totaled 25,397, or 10,594 more than last year. Trucks weighing from 5000 to 10,000 lb. constitute the class showing the greatest increase. Experts here say that a five-ton truck, when loaded, may have an approximate weight of 8000 lb. on each rear wheel. There were 21,907 motorcycles registered. The number last year was 20,489. The number of automobile drivers paying a license is 64,815, the fees amounting to \$129,630. Traction engines reached a total of 1529 and trailers 871.

## Prominent Tradesmen Assume New Duties

### Resignations and Promotions Place Workers in New Places

N. R. Feltes has been elected treasurer of the Studebaker Corp., succeeding Chas. C. Hanch, who has been placed in charge of the Automotive Products Section of the War Industries Board.

H. G. Wedler of the Emil Grossman Mfg. Co., Brooklyn, has joined the colors and is in the mechanical repair shops, Unit 305, Camp Jesup, Atlanta, Ga.

Howard Cody, for the past several years sales manager for the Frank O. Renstrom Co., San Francisco, Premier, Grant, Bethlehem and Atterbury distributor, has been placed in charge of wholesale sales. He is succeeded by E. W. Papert.

L. K. Cooper has been appointed sales manager of the Chevrolet Motor Co. of St. Louis, with headquarters at the St. Louis plant. He has been assistant to the sales manager of the Chevrolet Motor Co. of New York.

J. F. Cast, formerly special sales representative for the Firestone Tire & Rubber Co., Akron, has been promoted to the position of assistant manufacturers' sales manager.

E. B. Moon has been appointed director of sales and advertising for the Columbus Tractor Co., Columbus, Ohio, manufacturer of the Farmer Boy tractor. Gebhard Jaeger is named as production manager and general superintendent and Frank H. Nagle, formerly general manager of the Toledo Stove & Range Co., is assistant secretary and treasurer in charge of accounting and purchasing.

H. A. Waterbury has been made advertising director of the Essenkay Products Co., Chicago. A. H. Lipman, formerly in charge of the advertising, has resigned to join the colors.

Prescott C. Ritchie has been appointed district representative of the Westinghouse Electric Mfg. Co. with headquarters in Indianapolis. He succeeds H. S. Johnson, who has resigned.

C. C. Winningham has resigned as advertising manager of the Hudson Motor Car Co., Detroit, but retains his stock interests. He has not announced his future plans. It is said that no successor will be appointed during the war.

James Couzens, former vice-president and general manager of the Ford Motor Co., and for the past 2 years commissioner of police, has resigned the latter office to become a candidate for mayor.

N. W. Meyer, former sales promotion manager of the King Auto Sales Co., Detroit, has been appointed sales manager of the Detroit branch of the Roedding Signal Tail Light, Grand Rapids.

J. M. Smith, for 7 years superintendent for the Federal Truck Co., St. Louis, has entered the Signal Service of the Army and Fred L. Dow, who has been an inspector for the Federal company, has been made superintendent.

John L. O'Donnell, for several years in charge of the motor car accessory department of the Vandervoort Department Store in St. Louis, has been made manager of the St. Louis branch of the Sterling Tire Corp. O. E. Lee, connected with the Brunswick tire distribution in St. Louis, is the new assistant manager.

## George Woelfel Leaves N. A. A. J.

CHICAGO, July 8—George Woelfel, Jr., secretary to Commissioner William M. Webster of the National Association of Automobile Accessory Jobbers, has resigned and will leave the work of the jobbers' association July 13. "George," as he is universally known to the membership of the association, has become a familiar part of conventions through his duties on the platform as an efficient aide to the commissioner.

I. O. Taft, who has been supervisor in the St. Louis zone for the Maxwell Motor Sales Corp., has been promoted to supervisor for that zone for Maxwell passenger cars and trucks and Chalmers cars.

R. H. Johnston, who has been manager of the New York branch of the White Co. since 1910, and has been actively connected with the company for the past 15 years, has been elected vice-president. He will immediately transfer his headquarters to Washington and is to be succeeded as New York manager by William H. Moore of Pittsburgh.

Major W. G. Wall, who was chief engineer of the National Motor Vehicle Co., Indianapolis, has been promoted and is now a Lieutenant-Colonel. Col. Wall has just returned from the American Expeditionary Forces in France, where he was investigating motor equipment, including tractors and tanks.

Walter White of the White Co., Cleveland, has been appointed in charge of operations for the Motor Transport Service under Col. F. Glover. White takes the place vacated by the transfer of Lieut.-Col. James Furlow to the general staff; he will have charge of the operation of army trucks in this country.

Fred C. Sibley has been appointed district sales manager for the Sanford Motor Truck Co., Syracuse. His territory will include New York and Pennsylvania.

George Effros, Memphis, has been appointed southern district sales manager for the Sanford Motor Truck Co., Syracuse. His territory will include the States of Tennessee, Mississippi, Arkansas, Alabama and Louisiana.

## Automobile Workers Being Reclassified

### Draft Boards in Boston Start on Mechanics and Probably Some Will Be Changed

BOSTON, July 6—The draft boards in Boston have set about reclassifying the workers in the automobile industry, and during the past week a number of employees were ordered to come in and report what their work amounted to. Those who were doing nothing but the ordinary cleaning of cars or trucks or porter work were told that it did not grant them any exemption, and so some of them have been put from the deferred class into Class A.

Others who were working as mechanics were questioned as to whether they were employed upon trucks or passenger cars, and it is thought that the boards will rule that if they are repairmen on the latter they will be certified into the work-or-fight class. The salesmen were not all called in, for about all those left now in the industry are above the draft age.

### Memph's for War Service

MEMPHIS, TENN., July 6—The automobile dealers of this city will close on Sundays and holidays, beginning Sunday, July 7 and daily thereafter at 6.30 p. m. complying with the request of the War Economy Board.

### Great Britain Likes Our Money System

LONDON, July 5—A strong attempt to decimalize English coinage is being made and is supported by the British Association of Chambers of Commerce, the Bankers Institute and the Decimal Association. If the plan were carried out, it would supplant the British system of money with a system based upon the decimal unit as is American money.

## Motor Securities Quotations

	Bid	Asked		Bid	Asked
*Ajax Rubber Co.	63	64	*Maxwell Motor Co., Inc., 1st pfd.	57	58
*J. I. Case T. M. Co., pfd.	80	86	*Maxwell Motor Co., Inc., 2nd pfd.	21½	22
Chalmers Motor Co., com.	3½	5	Miller Rubber Co., com.	103	105
Chalmers Motor Co., pfd.	25	35	Miller Rubber Co., pfd.	92	95
*Chandler Motor Co.	81	83	Packard Motor Car Co., com.	117	120
Chevrolet Motor Co.	136	138	Packard Motor Car Co., pfd.	93	96
*Fisher Body Corp., com.	35	45	Paige-Detroit Motor Car Co.	18	20
*Fisher Body Corp., pfd.	82	87	Peerless Truck & Motor Corp.	14	16
Fisk Rubber Co., com.	55	58	Portage Rubber Co., com.	102	105
Fisk Rubber Co., 1st pfd.	98	102	Regal Motor Car Co., pfd.	—	—
Fisk Rubber Co., 2nd pfd.	78	83	*Reo Motor Car Co.	13	15
Firestone Tire & Rubber Co., com.	89	91	*Saxon Motor Car Corp.	8½	9
Firestone Tire & Rubber Co., pfd.	93	95	Springfield Body Corp., com.	—	—
*General Motors Co., com.	157	160	Springfield Body Corp., pfd.	—	—
*General Motors Co., pfd.	81½	82	Standard Motor Construction Co.	11½	12½
*B. F. Goodrich Co., com.	44½	45½	*Stewart-Warner Speed. Corp.	57½	58½
*B. F. Goodrich Co., pfd.	97½	100	*Studebaker Corp., com.	46½	47
Goodyear Tire & Rub. Co., com.	166	169	*Studebaker Corp., pfd.	85	90
Goodyear Tire & Rub. Co., pfd.	97	97½	Swinehart Tire & Rubber Co.	55	62
Grant Motor Car Corp.	2½	3	United Motors Corp.	33½	34
Hupp Motor Car Corp., com.	3	3½	*U. S. Rubber Co., com.	59½	60½
Hupp Motor Car Corp., pfd.	78	80½	*U. S. Rubber Co., pfd.	104½	106½
International Motor Co., com.	29	35	*White Motor Co.	41	42
International Motor Co., 1st pfd.	55	65	*Willys-Overland Co., com.	20	20½
International Motor Co., 2nd pfd.	35	43	*Willys-Overland Co., pfd.	81½	83
*Kelly-Springfield Tire Co., com.	49	50	Standard Parts Co.	63	68
*Kelly-Springfield Tire Co., 1st pfd.	79	87			
*Lee Rubber & Tire Corp.	18	20			
*Maxwell Motor Co., Inc., com.	31	31½			

\*At close July 6, 1918. Listed N. Y. Stock Exchange. †Par value \$10.

## Milwaukee Tire Man Who Won't "Co-op"

**Fails to See Merit in N. A. D. A.  
War Conservation Plans and  
Runs a Big Ad**

MILWAUKEE, July 6—An interesting development in the situation with respect to war conservation in the retail motor car, tire and supply industry at Milwaukee is the position taken by the Curtis Rubber Co., Milwaukee and Oneida Streets, distributor and retailer of Curtis fabric and Carlisle cord tires. F. J. Ramler, president of the Curtis company, questions the right of Alfred Reeke, state director of war conservation, to enforce his order that all tire dealers remain closed from 6 p. m. Saturday until Monday morning.

In a full-page advertisement published in a Milwaukee Sunday newspaper the Curtis company presents its position and gives the text of correspondence that has passed between Director Reeke and Ramler. The advertisement is headed:

"Warning to all tire users in Milwaukee: There has been a local movement on foot to combine tire dealers for the purpose of raising prices and making the public pay more for less service. We intend—even if we stand alone—to stand with the Government and with the people—by keeping prices down instead of pushing them up. Read the facts."

It is then stated that on June 12 the Curtis company was asked to join other tire dealers of Milwaukee in signing an agreement, the text of which is given in full. This has to do with the discontinuance of free service and the restriction of hours for doing business under the war conservation plan of the National Automobile Dealers' Association, which aims to release as much labor as possible for war work by decreasing the amount of service given.

"We positively refused to do this," says the advertisement, and it then quotes verbatim a letter of censure from State Director Reeke, who points out that everyone in the industry in Milwaukee is complying patriotically with the recommendations and suggestions of the War Economy Board for the conduct of retail motor car and supply trade. Reeke concludes:

"May I not hear from you immediately with the cheerful news that you have agreed with us that the Milwaukee motor car and supply trade should be on a 100 per cent war conservation basis?"

Ramler's answer, as quoted in full in the advertisement, says in part: "I took your letter with me to Washington and discussed it with the proper authorities. Let me ask you a few questions:

"Is your letter intended to indicate that you possess official authority and that the Government of the United States is interested in your movement?"

"Please tell me WHAT authority you have and WHERE Mr. W. A. Vesper got it?"

"Are you trying to get all of the tire dealers to agree to keep closed from Saturday at 6 p. m. until Monday morning—also holidays? Please tell me who will take care of our night, Sunday and holiday calls from the Police Department, Fire Department, ambulances, physicians, surgeons and general public? The public needs day and night service—we gladly give it to them. By what authority, except personal greed, do you insinuate we should stop?"

"Are you trying to raise service prices in order to make a clean-up? We find it sufficiently profitable to serve the public without raising our prices at this time. We don't believe in profiteering. We consider it highly unpatriotic, unfair and unscrupulous."

"We believe your plan would require each car owner to purchase and carry at least one additional tire and one additional tube, in addition to the usual spare tire carried, so as to tide him over evenings, Sundays and holidays. If there are 5,000,000 car owners in the country that might mean the added unnecessary expenditure of about \$150,000,000 and the added immediate drain upon the rubber supply of about 5,000,000 casings and 5,000,000 tubes, all of which seems to us to be against Government interest."

True patriotism demands that prices be kept down whenever possible instead of pushed up. Furthermore, whatever the Government authorities ask of us, no matter what it is, they can have it."

It is indicated further in the advertisement that the Curtis company intends to continue to stay open 24 hours every day.

The incident has created a stir in local trade circles and among the public. Further developments are being awaited with great interest.

### Deliver 5000 Class B Trucks

WASHINGTON, July 6—Slightly over 5000 Class B standard army trucks have been produced and delivered to the Government to date. Production of the B truck which is 3-ton capacity, is between 75 and 100 per day. Production has been slightly hampered by some delays in parts manufacture.

### N. A. D. A. Assured 5,000 Members

(Continued from page 7)

he has no part in the safeguarding work? The association is entitled to every dealer's support.

Some have misunderstood the facts, which are these:

1—Any dealer in cars is eligible to membership no matter whether he belongs to a local association or not.

2—He doesn't have to wait until he gets to a meeting to join. He can write a letter and send a check for \$5 membership fee and \$10 dues—\$15 in all—to National Automobile Dealers' Association and become a member at once.

3—The address is 3550 Lindell Boulevard, St. Louis, which is the principal office of the association.

## St. Louis "Persuades" Men Who Won't "Co-op"

**Gets at Source of Supply and Men  
Who Balk at N. A. D. A. Ideas  
Soon See the Light**

ST. LOUIS, July 8—"St. Louis motor service shops, oil stations and tire service stations are 99½ per cent closed," said Robert E. Lee, who was named by the War Economies Board to have charge of the closing regulations for this community. Lee took charge June 28 and in his first week had a holiday in addition to the Sunday. The shops got 24 hours' notice on the Sunday closing and 48 hours on the closing for July 4. Those open have asked for time to "get more information." They have been told that the time granted is very short. Lee reports this incident:

A Southside dealer in oils, tires and some accessories remained open the first Sunday. He became a bit defiant on Monday. Half an hour after he said that he would not close his telephone rang. The conversation was like this:

### "Persuasion" That Won

"This is the Pierce Oil Corporation. You were open yesterday?"

"Yes!"

"If that is the case we must stop selling you gasoline."

"All right."

In five minutes another call:

"This is the Texas Oil Co. Were you open Sunday?"

"Yes!"

"Well, if you remain open on Sunday you cannot expect to get gasoline and oil from us."

"There are others."

Another five minutes; another call.

"The Goodyear Tire Co. talking. We understand that you were open Sunday. Unless you have a good defense we will be compelled to cancel our contract for tires. Good-by."

Next the Sunday man called Lee:

"Mr. Lee, for God's sake call off those fellows. I will close."

"Glad to hear it," said Lee. His secretary restored the contracts.

It has been reported that some grocery stores have been selling gasoline to car owners during closed hours. Lee has taken this question up with the Food Administration in St. Louis, which works under the same authority as Lee, and has been assured that if it is shown that any grocer has served a motor car with gasoline during the closed hours that grocer will be penalized. The Food Administration pledges protection to the oil stations.

One Ford dealer was inclined to assert that it was his right to remain open to repair Ford trucks, but a word from the Ford assembly plant quickly brought him to time.

## Bonded Truck Service Philadelphia-New York

Company Plans Connections with  
Others and Will Handle  
Local Freight, Too

CHESTER, PA., July 5—A new motor truck service with terminals in Philadelphia, this city and New York, with stops at other points, has been established here and a bureau opened for return loads and other information relative to motor trucking. This is through the Manufacturers' Association of Delaware County in co-operation with the Citizens' Transportation Co., Inc., which has received the indorsement of the association in the transporting of merchandise.

The sole purpose will be to furnish a dependable bonded service on a uniform and reasonable basis of rates. A fleet of fifty or more motor trucks is at the service of the public, whether members of the manufacturers' association or not. The trucks used are Rikers and Pierce-Arrows, with trailers.

In connection with this service there is also a local delivery system. The equipment for this will be cars to operate between rail and water terminals and the plants or stores, as well as picking up and delivering from and to the company's loading platforms. At Philadelphia and New York similar local delivery service is being established, affording a door-to-door service, to which regular tariff rates will be applied. In addition to the through service by trucks alone connections are being made with water and rail lines for through shipments between the points mentioned. By this means embargoes at Chester may be overcome by routing freight by truck via Philadelphia and from that point by rail or the new barge line to New York.

Connections with motor truck lines serving the New England district also have been established by this concern. If the Chester district supports the service, the company promises that all reductions in cost of operation through increased tonnage will be recognized by a reduction in rates.

### Kansas City Battery Men Organize

KANSAS CITY, July 8—Battery service establishments have formed a local organization as the best means of bringing about fullest co-operation in the conservation program. The battery men got together June 10 and found out that co-operation could easily be effected. There was very little of the jealousy and friction that had been feared by some. June 25, at the second meeting, a temporary organization was formed, with the following officers:

President, William E. Poole, vice-president and general manager Kansas City Battery Co.; vice-president, H. S. Gardner, manager Mid-West Storage Battery Co.; secretary-treasurer, R. C. Randall, president Randall Electric Co.

The battery men put into effect, prior to the general conservation movement of the motor trades, a 5:30 closing rule, and made general the closing of battery stations on Sundays and holidays. A rule was established requiring cash from all individual customers, and steps were taken to extend the cash rule to all customers. The co-operation of the Kansas City Motor Car Dealers' Association was promised to make the cash rule effective for motor car dealers in business with battery stations, and to secure adjustment of procedure by other large customers so that the cash basis may be universal.

### Saves \$20,000 Overhead

BOSTON, July 6—Another dealer, John L. Judd, who handles the Smith Form-A-Truck, the Columbia and the Gramm-Bernstein lines, has followed the suggestion to cut down overhead by handling his lines all in one building. The Smith Form-A-Truck and the Columbia are on Beacon Street in a big building and the Gramm-Bernstein in another large place on Commonwealth Avenue. Judd has brought the Gramm-Bernstein down to the Beacon Street building, where he has room enough to take care of it, and he figures it will save him some \$20,000 a year in overhead expenses.

### Club Aids in Conservation

CHATTANOOGA, TENN., July 5—The Chattanooga Automobile Club is entering into the war service plans of the automobile dealers of this city. The dealers, as is now the practice throughout the trade, are endeavoring to teach owners better acquaintance with their cars in order that the petty service troubles with which the dealer has to contend may be eliminated.

To assist in this educational work, the Chattanooga Automobile Club is instituting a school. This school will teach owners how to take care of cars and do all sorts of small roadside repairs, but in addition it will take in men who are in the selective service draft and teach them as much as is possible about the automobile in a brief course. This will make the men better fitted for skilled work when they get into the army and, it is anticipated, will make them of more service to the Government. The dealers of the city are co-operating with the club in getting the school under way and in operating it.

### Truck Drive-Aways Interest

CINCINNATI, July 6—Daily drive-aways have become regular at the plant of the U. S. Motor Truck Co. Long lines of cars and trucks being driven under their own power to their destinations have become so frequent as to cause no comment in such large centers as Detroit and the other automotive manufacturing centers. But somehow the people of Kentucky and Southern Ohio do not seem to lose their interest and curiosity in the drive-aways.

## Detroit Starts First Return Loads Bureau

One Route Already Established  
and Others To Be in Operation  
in Two Weeks

DETROIT, July 6—The results of the efforts of the Detroit Return Loads Bureau to establish a return loads system in this territory are being made manifest now and the outlook is more hopeful than it was at the start. One route has already been established and steps are now on foot whereby several will be in operation before another fortnight passes.

A company styled the Overland Transportation Co. is operating two trucks between Detroit and Adrian—one GMC and the other a Hall, both of 4-ton capacity. They make three runs weekly, leaving Detroit Monday, Wednesday and Friday and Adrian Tuesday, Thursday and Saturday. Most of the produce brought into Detroit is picked up at the small towns along the route; very little, if any, has come direct from the farms.

The merchandise carried out of Detroit consists of a great variety of things. About half of the loads are composed of groceries and hardware and the balance stoves, automobile parts, etc. A route between Detroit and Jackson is in contemplation.

July 10 it is expected that a route will be started between Detroit and Flint with two 5-ton trucks, one leaving each city daily. It is planned to have the route divided, going north via Pontiac and returning via Fenton, Holly and Milford. Another route is planned from Detroit to Pontiac. It is believed there is enough business along this route for two such lines to operate profitably.

### Sale of Paige Denied

DETROIT, July 6—The rumor that the General Motors is about to purchase the Paige-Detroit Motor Co. is unfounded, according to H. M. Jewett, president of the latter company. The Paige company has been approached a number of times in the past by the General Motors Co. with offers to sell and the recent visit to the east of Mr. Jewett who sought an interview with W. C. Durant of the General Motors caused an over-zealous newspaper correspondent to write a story to the effect that Jewett's visit was prompted by a desire to go through with the deal. As a matter of fact, the conference between the two men dealt only with the steel situation.

### Canadian Ford Men Want More Money

WINDSOR, ONT., July 6—Five hundred employees of the Canadian Ford Motor Co. organized Friday night to force the company to increase their wages to 62½ cents an hour, or \$5 a day. If the company refuses the increases the Canadian labor department will be asked to allow arbitration. The present maximum wage is fixed at 45 cents an hour.



## Exports of Gasoline Increase During April

France Heaviest Buyer, Taking Nearly One-Third—Great Britain Next

NEW YORK, July 6—During the month of April the United States exported four and one-quarter million gallons of gasoline more than it did during April, 1917, and for the 10 months ending April, 1918, as compared with a similar period in 1917, the increase was nearly 25,000,000 gallons. Of the 20,862,303 gallons exported in April, 1918, France received nearly one-third, with the United Kingdom next, taking approximately one-fourth, and Canada and Cuba next with about one-seventh each. Following are export statistics for April, 1917 and 1918, and for the 10 months ending April, 1918:

	April, 1918 Gal.	April, 1917 Gal.
France .....	6,177,093	5,267,106
Italy .....	1,588,900	4,712,698
United Kingdom...	4,527,365	
Canada .....	3,334,560	1,274,684
Panama .....	54,104	100,950
Mexico .....	38,658	57,374
Cuba .....	3,086,913	35,895
Argentina .....	10,000	598,971
Brazil .....	111,100	547,850
Uruguay .....		50,000
Venezuela .....	157,165	132,452
Australia .....	448,400	600,750
New Zealand...	657,810	1,884,194
Philippine Islands...		100,000
British So. Africa..		339,450
Other countries...	670,235	901,756
Total .....	20,862,303	16,604,130

Ten months ended April, 1918-1917:

	April, 1918 Gal.	April, 1917 Gal.
France .....	48,646,118	52,056,033
Italy .....	26,651,703	12,318,071
United Kingdom...	56,818,949	48,252,299
Canada .....	23,207,667	17,525,387
Panama .....	1,210,309	792,367
Mexico .....	952,433	449,955
Cuba .....	6,037,328	1,207,811
Argentina .....	2,139,586	2,025,294
Brazil .....	4,666,648	4,658,968
Uruguay .....	400,020	193,400
Venezuela .....	436,985	675,337
Australia .....	6,839,215	6,123,220
New Zealand...	6,008,459	5,747,054
Philippine Islands..	1,496,604	2,187,580
British So. Africa..	2,414,240	3,081,930
Other countries...	9,624,375	15,862,561
Total .....	197,550,639	173,157,267

### To Close Washington M. A. M. A. Office

NEW YORK, July 6—The Washington office of the Motor and Accessory Manufacturers' Association has been closed.

The closing of the office will not mean the abandonment of the work which it has been carrying on, however. This is to be continued under the active supervision of A. W. Copland, who is chairman of the association's War Service Committee, and who is at present in charge of the Washington office.

The establishment of the Washington office, which is housed in the Ouray Building, was done with the object of assisting members and the government in war work. Since the establishment of Regional Purchasing Departments, however, much of the work done by Mr.

Copland and his assistants now is being done by the government. Furthermore, many of the M. A. M. A. members who were in line for government work have received it, so that the need for the Washington office has passed.

## Price Changes

NEW YORK, July 8—Following are changes in price which have been made during the past week:

Car	Old Price	New Price
Glide, light six-forty.....	\$1495	\$1595
Templar, five-pass.....	2085	2185
*Haynes, Model 39.....		1900

\*New model.

### Cadillac Prices Advance

DETROIT, July 1—The Cadillac Motor Car Co. has to-day advanced the prices of all its models as follows:

Model	New Price	Old Price
Open cars:		
7-Passenger .....	\$3,220	\$2,970
4-Passenger .....	3,220	2,970
2-Passenger .....	3,220	2,970
Closed cars:		
Brougham, 5-pass....	4,090	3,840
Victoria .....	3,615	3,365
Chassis:		
125-in. ....	2,690	2,490
132-in. ....	2,770	2,570
145-in. ....	2,810	2,610

### Two Tire Companies Raise Prices

NEW YORK, July 6—Two tire companies, the Lee Tire & Rubber Co. and the Endurance Tire & Rubber Co., have increased prices of their tires beginning July 1. Lee tires are up 5 per cent and Endurance 10 per cent. There does not seem to be a general disposition to raise prices on the part of the other large companies, but one or two have expressed the opinion that increases may be looked for in the near future. The new prices follow:

Size	Lee Old Price	New Price
30 x 3.....	\$15.70	\$16.50
30 x 3½.....	20.00	21.00
32 x 3½.....	23.50	24.70
31 x 4.....	31.00	32.55
33 x 4.....	33.05	34.70
34 x 4.....	34.25	36.00
34 x 4½.....	45.55	47.85
36 x 4½.....	48.40	50.85
35 x 5.....	55.90	58.70
37 x 5.....	59.15	62.10

Size	Endurance Old Price	New Price
30 x 3.....	\$20.35	\$22.40
30 x 3½.....	26.15	28.75
32 x 3½.....	30.25	33.25
31 x 4.....	39.90	43.90
33 x 4.....	42.65	46.90
34 x 4.....	44.00	48.40
34 x 4½.....	58.30	64.10
36 x 4½.....	61.90	68.10
35 x 5.....	69.85	76.85
37 x 5.....	74.00	81.40

### Athens County Bands Together

ATHENS, OHIO, July 6—The Athens County Automobile Trade Association was organized recently. Practically all of the dealers in the county including Nelsonville and Batavia have united with the association. J. B. Lostro is president, and A. B. Wells, secretary.

## To Let Younger Men Drive Cars for Hire

Draft Cuts Into Supply of Chauffeurs and Boston Would Lower Permissible Ages

BOSTON, July 8—Because of the scarcity of young men to drive motor vehicles the automobile dealers of Boston are to have a meeting next week, at which the matter of changing the age limit for driving for hire will be taken up, and a committee appointed to see the Highway Commission on the matter. Under the present law a young man of 16 years can drive a machine under an operator's license provided that he is not paid for the work. To drive for hire a person must be 18 years of age. The dealers think that a young man 16 who is capable of driving without pay ought to be able to drive for compensation.

There is one obstacle in the way, due to the fact that the present law is a legislative enactment, but some of the dealers think that under the powers granted to the Highway Commission they may be able to make a regulation which, if approved by the Governor and the council, would cover the case. That is why they are taking the matter up.

The headlight regulation is not a legislative enactment but a Highway Commission rule, and the dealers believe that if lights can be so regulated the age limit might be changed due to stress of war. Some of the dealers feel that there are a lot of young men more than 17 years of age who would make good drivers if given the opportunity, and this would release older men for the heavier trucks if the commission felt that the younger lads should be restricted to light cars. By a thorough examination it would be possible to select the capable drivers and if necessary limit the power of operating to specific vehicles.

### May Let Owners Use Tools

BOSTON, July 6—Some of the Boston automobile dealers are considering a plan whereby owners of cars can come into the service stations and work on their own cars in need of repairs. Due to the shortage of labor it is not possible to get men enough to do the work as promptly as before. The dealers feel that if the owners know that they can use the tools and have some one give a helping hand in suggestions and a lift now and again with heavy work that the motorists will be glad to pay something for being given this privilege.

### Coast Branch for Hyatt

NEW YORK, July 8—The Hyatt Roller Bearing Co. of Chicago has opened a branch office in San Francisco, from which Pacific Coast trade will be handled. A. W. Fisher will be in charge of the branch.

Specifications  
of the  
Leading Cars

# MOTOR WORLD GUIDE

Revisions Are  
Made in Table  
Every Week

Model	Motor	S. A. E.	Ignition	Carburetor	Starting	Clutch	Gearset	Wheelbase	Trunk	Limousine	Top
ABBOTT	6-31x4 20.4 Remy		Stumg	Remy	DD	3	122	34x4	SS	...	...
ALLEN	4-31x5 22.5 Conn		Stumg	A-Lite	D	3	112	32x4	SS	...	...
AMERICAN	6-31x5 28.4 G & D		Zenith	G & D	DD	3	122	32x4	SS	...	...
ANDERSON	6-31x4 25.3 Conn		Zenith	Wesha	DP	3	120	32x4	SS	...	...
400-F	6-31x4 29.4 Bosch		Stumg	Wesha	DD	3	120	32x4	SS	...	...
APPERSON	8-31x5 33.8 Remy		Johnson	Bijur	DP	3	130	34x4	SS	...	...
8th Anniversary										...	...
AUBURN	6-31x4 25.3 Remy		Radd	Remy	DP	3	120	34x4	SS	...	...
6-30-B	6-31x4 29.4 Delco		Radd	Delco	DP	3	121	35x4	SS	...	...
AUSTIN	12-31x5 39.6 Delco		Stumg	Delco	D	6	142	34x4	QD	...	...
BEAL	4-31x4 22.5 A. Kent		Zenith	Dyneto	D	3	114	31x4	QD	...	...
BIDDLE	4-31x4 22.5 Eisman		Zenith	G & D	DP	4	121	32x4	QD	...	...
BOUR-DAVIS	6-31x4 29.4 West.		Stumg	West.	DP	3	118	32x4	QD	...	...
185	4-31x4 22.5 West.		Radd	West.	DP	3	118	32x4	QD	...	...
BREWSTER	4-4 25 26.6 Bosch		Zenith	U.S.L.	C	3	125	34x4	SS	...	...
BRISCOE	4-31x4 18.3 Conn		Buick	A-Lite	C	3	104	30x4	C	...	...
B4-24	4-31x4 18.2 Delco		Marvel	Delco	C	3	106	31x4	C	...	...
E-4-34-35	6-31x4 27.3 Delco		Marvel	Delco	DP	3	118	34x4	SS	...	...
E-4-46	6-31x4 27.3 Delco		Marvel	Delco	DP	3	124	34x4	SS	...	...
CADILLAC	8-31x5 31.2 Delco		Own	Delco	D	3	126	35x5	SS	...	...
57										...	...
CASE	6-31x4 29.4 Wesha		Radd	Wesha	D	3	125	35x4	SS	...	...
CHALMERS	6-31x4 25.3 Remy		Stumg	Wesha	DP	3	117	32x4	SS	...	...
6-30										...	...
CHANDLER	6-31x5 29.4 Bosch		Radd	Wesha	DP	3	123	34x4	SS	...	...
CHEVROLET	4-31x4 21.7 Remy		Zenith	A-Lite	C	3	102	30x4	C	...	...
490	4-31x4 21.7 Remy		Zenith	A-Lite	C	3	108	32x4	SS	...	...
FA	6-31x4 26.4 Remy		Zenith	A-Lite	C	3	120	34x4	SS	...	...
D										...	...
COLE	8-31x4 39.2 Delco		Stumg	Delco	C	3	127	33x5	SS	...	...
873										...	...
COLUMBIA	6-31x4 25.3 A. Kent		Stumg	W. Lord	DP	3	115	32x4	...	...	...
C&D										...	...
COMET	6-31x4 29.4 Delco		Radd	Dyneto	D	3	125	33x4	...	...	...
C-50										...	...
COMMONWEALTH	4-31x5 19.6 A. Kent		Carter	Dyneto	DD	3	115	32x4	SS	...	...
CROW-ELKHART	4-31x5 19.6 Conn		Zenith	Dyneto	D	3	114	32x4	SS	...	...
CE-36	8-31x5 45.0 Delco		Stumg	West	D	3	123	35x5	...	...	...
CUNNINGHAM										...	...
8-31x5										...	...
DANIELS	8-31x5 33.8 Wesha		Zenith	Wesha	D	3	127	34x4	QDR	...	...
B										...	...
DAVIS	6-31x4 25.3 Delco		Stumg	Delco	C	3	119	34x4	...	...	...
H-1	6-31x4 29.4 Delco		Stumg	Delco	C	3	126	34x4	...	...	...
J-1										...	...
DIXIE FLYER	4-31x5 16.9 Conn		Carter	Dyneto	D	3	112	32x4	SS	...	...
LS3										...	...
MAIBOHN	4-31x4 15.6 A. Kent		Zenith	Dyneto	DD	3	105	30x4	C	...	...
A	6-31x4 25.4 A. Kent		Stumg	Wagner	P	3	115	32x4	SS	...	...
MARMON	6-31x4 33.7 Bosch		Stumg	Bijur	C	3	136	32x4	QD	...	...
34										...	...
MAXWELL	4-31x4 21.0 A. Kent		K. D.	Stumg	C	3	109	30x4	C	...	...
26										...	...
McFARLAN	6-41x6 48.6 Mag'to		Stumg	Wesha	DP	3	136	35x5	QD	...	...
MERCER	4-31x4 22.5 Bosch		Zenith	U.S.L.	DD	4	132	34x4	QD	...	...
Series 4										...	...
METZ	4-31x4 24.0 A. Kent		A.W.T.	Wesha	F	1	108	32x4	SS	...	...
25										...	...
MITCHELL	6-31x5 25.3 Remy		Radd	Remy	C	3	120	32x4	SS	...	...
D-40	6-31x5 29.4 Remy		Stumg	Remy	C	3	127	34x4	SS	...	...
C-42										...	...
MOLINE-KNIGHT	4-31x5 22.5 Conn		Schubler	A-Lite	C	3	118	34x4	SS	...	...
G	4-31x5 25.6 Conn		Schubler	A-Lite	C	3	122	35x4	SS	...	...
MONITOR	4-31x4 22.5 Conn		Schubler	Dyneto	D	3	110	32x4	SS	...	...
C-R	6-31x4 25.3 Conn		Stumg	Dyneto	D	3	117	33x4	SS	...	...
J										...	...
MONROE	4-3 24 14.4 Conn		Zenith	A-Lite	DD	3	99	31x4	QD	...	...
M-3	4-31x4 16.9 Conn		Zenith	A-Lite	DD	3	115	32x4	QD	...	...
M-4										...	...
MOON	6-31x4 19.8 Delco		Thom	Wagner	DD	3	114	32x4	SS	...	...
6-36	6-31x5 21.4 Delco		Radd	Delco	DP	3	125	35x4	SS	...	...
MOORE	4-31x4 22.5 Conn		Schubler	Dyneto	D	3	106	30x4	...	...	...
30										...	...
MURRAY	8-31x5 33.8 Dixie		Zenith	Wesha	DP	3	128	34x4	...	...	...
NASH	6-31x5 25.3 Delco		Marvel	Delco	P	3	127	34x4	SS	...	...
682										...	...
681-683										...	...
684-685										...	...
NATIONAL	6-31x5 29.4 Dixie		Radd	Wesha	C	3	128	34x4	QDR	...	...
Six	12-31x4 39.6 Delco		Radd	Bijur	C	3	128	34x4	QDR	...	...
NELSON	4-31x4 15.6 Bosch		Zenith	U.S.L.	D	3	104	32x4	SS	...	...
OAKLAND	6-21x4 19.0 Remy		Marvel	Remy	C	3	112	32x4	SS	...	...
34-B	8-31x4 26.4 Delco		B. & Ball	Delco	C	3	120	34x4	SS	...	...
45-A	6-21x4 18.9 Remy		Johnson	Remy	C	3	112	32x4	SS	...	...
37										...	...
OLYMPIAN	4-31x4 16.9 Conn		Stumg	A-Lite	D	3	112	32x4	...	...	...
OVERLAND	4-31x5 18.2 Conn		Thom	A-Lite	C	3	112	32x4	SS	...	...
33B4	4-31x5 25.3 Conn		Thom	A-Lite	C	3	104	31x4	C	...	...
90										...	...
83B6	6-31x4 25.3 Conn		Thom	A-Lite	C	3	116	32x4	...	...	...
OWEN-MAGNETIC	6-31x4 29.4 Bosch		Zenith	O-M	OM	6	125	34x4	SS	...	...
O-36	6-31x4 33.7 Bosch		Zenith	O-M	OM	6	138	35x5	SS	...	...
W-42	6-4 25 33.4 Bosch		Zenith	O-M	OM	6	142	35x5	SS	...	...
PACKARD	12-3 25 43.2 Delco		Own	Bijur	DD	3	128	35x5	QD	...	...
3-35										...	...
PAIGE	6-31x5 23.4 Remy		Stumg	G & D	D	3	117	32x4	SS	...	...
6-30	6-31x4 20.4 Remy		Radd	Remy	D	3	127	35x4	SS	...	...
6-55										...	...

[illegible]

ABBREVIATIONS. "A. Keat" Atwater Kent, "A. Lite" Auto-Lite, "B. & Ball" Ball & Ball, "Cana" Connecticut, "G & D" Gray & Davis, "Elsman" Elsmann, "L. N." Leece-Neville, "N. E." North East, "Newcom" Newcomb, "O. M." Owen Magnetic, "Raid" Rayfield, "S. S." Stromberg, "Splinter" Splinter, "T. L." Tilton, "W. Lard" Ward Leonard, "D. D." Dry Disk, "P." Plate, "D. P." Dry Plate, "C." Control, "F." Friction, "G." Gearless, "C. U." Control Unit, "Mag." Magnetic, "S. S." Straight Inside, "Q. D." Quick Detachable, "C." Clincher, "DC" Detachable Clincher, Reversible, "U" Universal, "R & M" Robbins & Myers. NOTE—37½x3½ means that the rear tires are 37½x½ and the front are smaller. Detachable top, 360x, means \$300 extra.

### Books Received

**Automobile Repairshop Shortcuts.**—The fourth revised and enlarged edition of this book has made its appearance in an entirely new dress. This time the volume has 250 pages, the same size as the pages in Motor World, and is bound in durable buckram and should stand rough usage without material damage. The book contains 1500 Repairshop Shortcuts which have been appearing in Motor World for several years and is comprehensively indexed. The price is \$2.50, and it is published by the U. P. C. Book Co., 239 West Thirty-ninth Street, New York.

**Automotive Wiring Manual.**—Automotive Publishing Co., 5 North Wabash Avenue, Chicago. Price \$10. Contains wiring diagrams of all cars from 1912 to 1918 inclusive, including internal wiring connections of generators, starting motors, controllers, switches, etc., of all electric starting and lighting systems. The pages of the book are 10½ x 8 in., so that the diagrams are sufficiently large and distinct as to leave no room for doubt. The wiring lines appear in white on a blue background, the same as in a blueprint, and each diagram cites the source of information. A comprehensive index occupies the first few pages, followed by brief practical instructions on construction, testing and maintenance of storage batteries, generators, starting motors, coils, controllers, etc. A number of pages are left blank for the insertion of memoranda.

### Regal Sold at Auction

DETROIT, July 6—The machinery, equipment and property of the Regal Motor Car Co. was sold last week by the Security Trust Co. acting as receiver for the company. The total assets of the company were listed by the receiver as \$1,137,140.82. In this was included some machinery which was later sold to the government for \$41,000, about 5 per cent in excess of its inventoried worth. The balance was sold to Maurice Rothchild, one of the largest creditors, for \$500,000. The sale has not been confirmed by the court as yet. A petition has been filed requesting that an investigation into the company's affairs be made first and that a new receiver be appointed.

### Federal Tractors in Demand

DETROIT, July 6—Since Jan. 1 the Federal Motor Truck Co. has manufactured 100 tractors and reports that the demand for this type of vehicle is increasing. The company is suggesting to its dealers that they take on a trailer line. Many of the tractors are being shipped south to lumbering sections.

### New Men at Aluminum Castings

DETROIT, July 6—Howard Emery, who was manager of the Detroit plant of the Aluminum Castings Co. some years ago and later transferred to the manager-

ship of the Manitowoc plant, has returned to the Detroit plant to occupy the position of manager recently vacated by Charles B. Bohn. He has been connected with the company 13 years. Arthur Birge, previously manager of the Ames Tool & Shovel Co. of Anderson, Ind., has replaced R. F. Dyer, recently resigned, and is now assuming the position of district sales supervisor.

### Donovan Adds a Truck

BOSTON, July 6—Joseph S. Donovan, who conducts the Studebaker agency in Boston and vicinity, has entered the truck business, too. He has taken on the Sanford line for Eastern Massachusetts. Frank E. Wing, who has handled the Marmon for many years exclusively, has been considering adding a truck line to his business, and has had conferences with a couple of well known makers.

### Liberty Adds 73 Dealers

DETROIT, July 8—The Liberty Motor Car Co. during June added to its organization 73 dealers as follows:

Moore Auto Sales Co., Dillon, S. C.; George M. Lepper, Norwood, Mass.; Blake Corsen Co., Worcester, Mass.; H. A. DeHart & Son, Thorofare, N. J.; Thomas A. West, Sorento, Ill.; Geo. A. Romey, Melvin, Iowa; W. W. Foote, Missouri Valley, Ia.; Wm. Dahlgren, Minden, Iowa; George Siegrist, Cresco, Neb.; B. O. McDonald, Herman, Neb.; C. T. Wilson, Hebron, Neb.; Bendel & McGrew, Naponee, Neb.

W. T. Beck, Bowden, Ga.; Blitch & Jones, Statesboro, Ga.; James B. Nichols, Newtown, Conn.; C. F. Turney, Bonesteel, S. D.; A. G. Steinfeldt, Fairview, S. D.; F. H. Anderson, Correctionville, Iowa; J. J. Duster, LeMars, Iowa; E. W. Thomas, Spirit Lake, Iowa; A. B. Clark, Munson, Alberta; W. A. Eligner, Astoria, Ore.; E. A. Brodey Co., Sharpetown, Md.; E. C. Ward, Laurel, Del.

Wright & Burdorf, Papillion, Neb.; Ong Auto Co., Ong, Neb.; W. F. Morrison, Belvidere, Neb.; E. Tiedeman, Hickman, Neb.; A. L. Latta, Cheraw, S. C.; H. C. Bland, Sumter, S. C.; Dixie Auto Co., Columbia, S. C.; Grady-Turner Garage, Drew, Miss.; Cum-

### Catalogs Received

The Metal Hose & Tubing Co., Brooklyn, has issued an unusually attractive catalog describing and illustrating its line of flexible metallic tubing for pass-line service. The book has about 40 pages, 9 x 12, and is beautifully bound and printed. Among other things there are illustrated a large number of modern gasoline filling stations and garages, which should be useful to those contemplating the erection of new structures.

.....  
mings Garage & Auto Co., Shaw, Miss.; De-Paolis & Garrow, Uniontown, Pa.; Geo. A. Gove, Brockton, Mass.; A. H. MacIntyre, Carmangary, Alta.;

G. V. Metcalf, Sibley, Iowa; A. L. Stewart, Ocheydan, Iowa; J. A. Hinrichs, Wall, S. D.; Claude C. Needham, Ventura, Cal.; H. A. Harris, Tillamook, Ore.; Tregre Motor Co., Baton Rouge, La.; Cooney & Himiller, Malvern, Iowa; G. Van Valkenburg, Blue Rapids, Kan.; J. J. Kabley, Crete, Neb.; L. L. Coon, Elmwood, Neb.; Elvin McNew, Greenville, Ill.; J. H. Velott, Williamsport, Pa.

Sawyer Machine Co., Vineland, N. J.; Cadillac Garage, Sunbury, Pa.; C. F. Goodin, Charleston, Mo.; P. C. Schuster, New Baden, Ill.; Barry & Durssee Auto Co., Marshalltown, Iowa; George Higgins, Glassboro, J.; J. M. Selden, Jr., Wilkinsburg, Pa.; Scheures, Prineville, Ore.; Joseph A. Pica, Pontiac, Mich.; Prather & Ewing, La Col.

Frank E. Byrd, Asheboro, N. C.; Auto Tractor Co., Concord, N. C.; C. T. Everhart, Thomasville, N. C.; S. J. Rees, Six Mile Run, Pa.; C. M. Kunkel, Dover, Pa.; F. I. Merritt, Ponca, Neb.; Sanders & Schenstock, Beemer, Neb.; John W. Wolken, Barneston, Neb.; Ralph E. Poole, Spencer, Iowa; Kendall Auto Co., Pasadena, Cal.; H. W. Barnes & D. Boyd, Griffin, Ga.; David R. Mitchell, Bridgeton, N. J.; J. E. Martin, Santa Maria, Cal.; C. J. Mitchell, Brantford, Ont.; Athens Liberty Co. Athens, Ga.

### Export Office for Esta

NEW YORK, July 6—The Esta Co., manufacturer of the Esta water auxilator, has opened an export department at 1068 Fulton Street.

## Coming Events

Columbus	Ohio Automobile Trade Association	July 10
	State meeting.	
Auburn, N. Y.	Tractor demonstration (F. L. Dewep farm)	July 13
	State Food Commission. E. C. Weatherby in charge.	
Syracuse, N. Y.	Tractor demonstration	July 27
	State Food Commission. F. R. Teall in charge.	
Salina, Kan.	National Tractor Farming	July 29-Aug. 2
	Demonstrations. A. E. Hildebrand, Manager.	
*Orange County, N. Y.	Tractor demonstrations. New York	Aug. 1
	State Food Commission; Calvin J. Huson, Director.	
Fulton, N. Y.	Tractor demonstration (near Fair Grounds)	Aug. 6
	State Food Commission. E. W. Underwood in charge.	
*Columbia County, N. Y.	Tractor demonstrations, New York	Aug. 15
	State Food Commission; Calvin J. Huson, Director.	
Indianapolis, Ind.	Automotive Show, Indiana State	Sept. 2-7
	Fair, Indianapolis Automobile Trade Association; John Orman, Manager.	
*Canada	Tractor demonstrations	Sept. 17-18-19
Dallas, Tex.	Seventh Annual Automobile Show	Oct. 14-17
	Texas State Fair.	
Dallas, Tex.	Seventh Annual Texas Automobile Show	Oct. 14-27
	Texas State Fair.	
Chicago, Ill.	Convention and Automotive Equipment Exhibit	Oct. 28-Nov. 2
	National Association of Automobile Accessory Jobbers.	

\*Date and place not definitely fixed.



Where Are We Headed For?—In This Issue

# MOTOR WORLD

**DEALERS, JOBBERS AND GARAGEMEN**

Volume LVI  
No. 3

PUBLISHED WEEKLY  
NEW YORK, JULY 17, 1918

Ten cents a copy  
Two dollars a year

## Hudson Dealers and the Advantage they have

Hudson dealers have a decided advantage in these times. They are established. They have built reputations in their communities.

The very fact that most Hudson dealers have concentrated their efforts during the past few years has strengthened their connection, not only with the factory, but with their customers. When others were taking on side lines, Hudson dealers were working for Hudson. It is co-operation of this sort that has made Hudson dealers prosperous and has made them the leaders in their localities.

Hudson has always demanded merchandising ability and now more than ever this quality is necessary for the present day automobile dealer.



**Hudson Motor Car Company**  
Detroit Michigan,



THE Nash selling franchise is bound to offer dealers an unusual opportunity for profits when we are in a position to enlarge our selling organization after the war. We would advise you, therefore, to keep this Nash proposition in mind if you are planning on getting your share of the large volume of business which is surely in sight on passenger cars and trucks of the high quality of the Nash.

**Nash Passenger Cars**

5-Pass. Touring Car	\$1395
4-Pass. Roadster -	1395
Sedan - - - -	2085
4-Passenger Coupe -	2085
7-Passenger Touring Car	1545

**Nash Trucks**

One Ton	Chassis	\$1595
Two Ton	Chassis	2075
Nash Quad	Chassis	3250

Prices f. o. b. Kenosha

**NASH TRUCK FEATURES**

*M. & S. automatic locking differential.  
Internal gear-drive rear axle.  
Electric lights and starter.  
Unusually long springs, and the Hotchkiss drive.  
Extra heavy frame and radiator construction*

**The Nash Motors Co., Kenosha, Wis.**

*Manufacturers of Passenger Cars and Trucks  
[Including the Famous Nash Quad]*

**NASH MOTORS**

VALUE CARS AT VOLUME PRICES

# MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

PUBLISHED EVERY WEDNESDAY BY

The Class Journal Co.

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Be Sure—See That Your  
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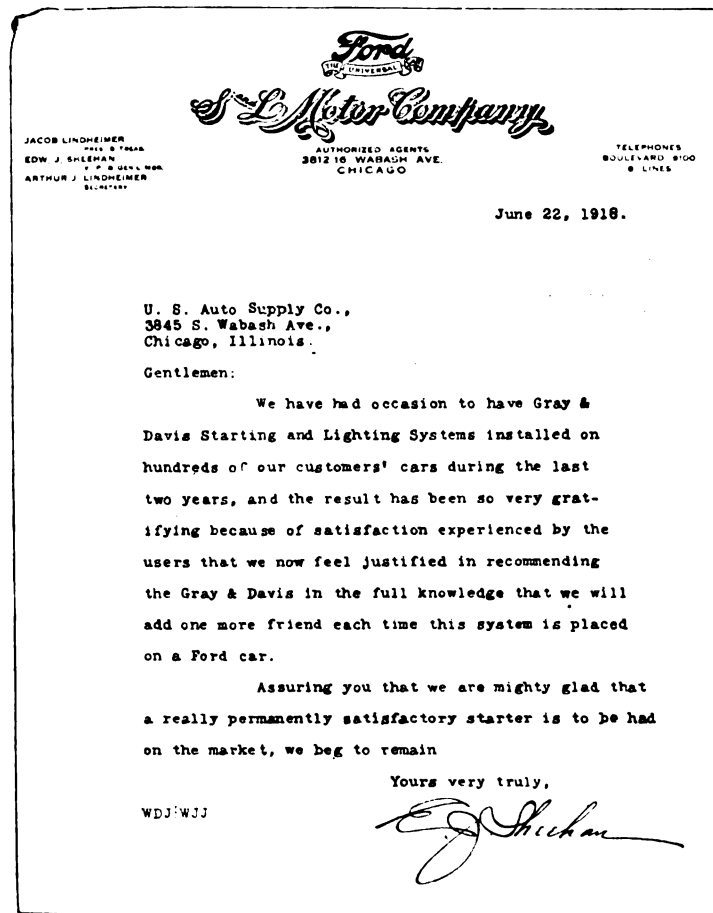
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# GRAY & DAVIS

## Starter for F O R D cars

This letter was received by one of our Distributors and explains why every dealer selling Gray & Davis Ford Starters will always be satisfied.



*Write today.*

*Booklet A-62 upon request.*

**GRAY & DAVIS, Inc., BOSTON, MASS.**

*Canadian Distributor, UNIVERSAL CAR AGENCY, WINDSOR, ONT.*



# MOTOR WORLD

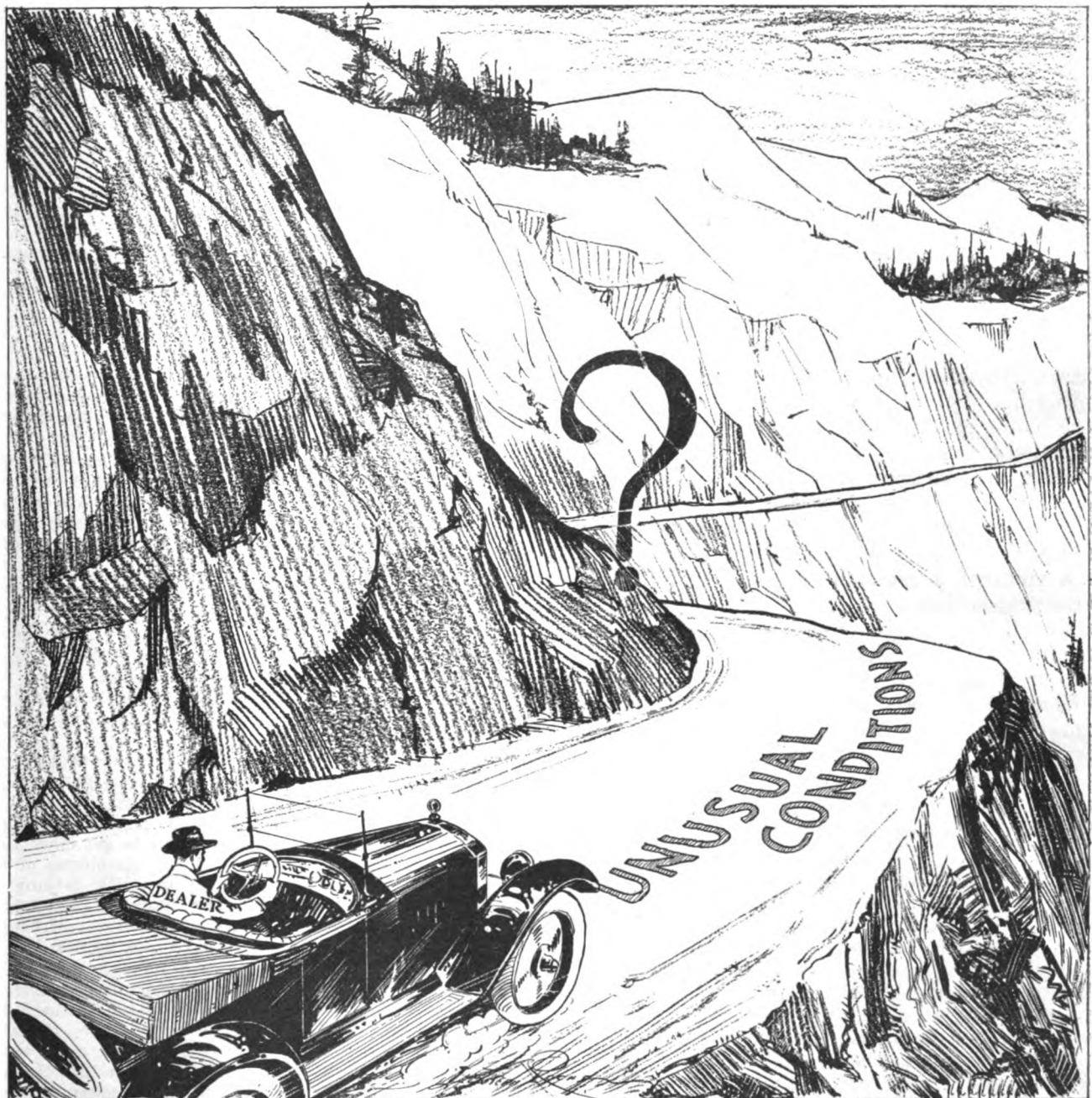
for  
DEALERS, JOBBERS AND GARAGEMEN

Vol. LVI

New York, U. S. A., Wednesday, July 17, 1918

No. 3

## Drive Safely



*What's around the corner? Nobody is sure. But this we know: The road beyond is **THERE**. We can't see what's around the corner of the next year. Therefore, drive carefully. Get your business in trim. Figure on a margin of safety. Keep your head and be a real driver and not a joy-rider of business*

# Where Are We Headed For?

## *An Automotive Prophecy Based Upon a Study of the Piano Business*

The piano business is much like the motor car business. The products are large-priced goods, there are many accessories, the merchandising is similar and things that have happened in the piano trade are, thus far, much like the history of the motor car trade.

### If the Comparison Is True

- |  |   |
|--|---|
| <p>1—Car dealers will regret having passed up the accessory business and will try to get it back.</p> <p>2—Dealers handling only one car—and that high-priced—will cease to exist.</p> <p>3—Dealers will have a "line" of cars for all purses.</p> | <p>4—Dealers will sell a complete line of automotive goods—trucks, tractors, gas engines, farm lighting outfits and other articles.</p> <p>5—Dealers will become more intensive cost accountants.</p> |
|--|---|

**S**T. LOUIS, MO., July 15—The problems that now confront the motor car trade in its reorganization from a sporting proposition to a business machine are strikingly like those which confronted the piano trade a few years ago when it was changed from a cultural missionary to a business proposition.

Further than that, the most approved methods now suggested to motor car dealers are strikingly like those which the piano trade worked out for itself. These similar problems are found in caring for the overhead in the sale of pianos, the problems of salesmanship and the handling of accessories.

The reorganization was forced upon the piano trade because the department stores threatened to take their business, after they had taken the sheet music business from them. That was before there were books written and systems copyrighted for solving the overhead and keeping departmental accounts to see which salesman or line was actually worth the cost, and which was not.

The reorganization comes to the motor car trade chiefly because this is an age of competition and the motor

By Clyde Jennings

car has changed from a luxury to a business necessity.

Every piano dealer has been a student of the motor car selling methods and has watched closely the success. There are several reasons for this—the chief being that the piano dealer at first saw in the motor car a rival that was likely to take the place of his instrument in the home of the well-to-do. He never feared that the rich folk would desert music and the piano, but he did fear that the near-rich would decide that they could afford either a motor car or a piano and take the motor car. Now he knows better. In some cases he hears from a prospect; "We are going to buy an automobile first," but that is only occasionally. Usually the two are not rivals for the family purse.

Another reason is that the motor car selling—as a problem—looked familiar to the older piano men. The trades began in the same way in a number of instances.

The motor car salesroom opened with a single line—usually only one price—and all advertising was done in this way—just as the piano trade did 20 years ago.

The motor car—like the piano in former days—was first sold not on its merits but for freak performances, and was handled by exhibitors who did things

with it that no ordinary mortal would care to do, like driving down steps—just as the freak performers once showed off pianos.

The salesmanship of motor cars has been crude and in the hands of men better qualified as chauffeurs and mechanics rather than for salesmanship—just as pianos were sold by musicians and tuners.

The service and accessory departments were neglected by the motor car men just as they were by the piano men.

The motor car men neglected the truck—which promises to be a fine money maker—just as the piano men were slow to take up the player—now the mainstay of the business.

*Both motor car men and piano men were long on dignity at first and short on plain business sense.*

Now the motor car men are finding that it is necessary to get down to real business, make real merchants of themselves, be ready to sell something to fit every customer's pocketbook and to keep books on every department of the business and to make each pay its own way.

A piano sales manager drew this interesting comparison of the piano problem in making the piano overhead a reasonable charge and to keep the department stores from running away with the business, as they at one time threatened to do. This man's name cannot be used because he does not want to pose as a critic or a prophet. He said:

"While pianos were high in price and went only into the homes of the rich or

well-to-do, most instruments were sold from factory stores or from stores owned by private individuals who prided themselves on being 'agents' or 'sole representatives' of certain lines.

"In those days the piano merchant had only the piano to sell, except where he conducted a sheet music department. The latter department disappeared because the department and specialty stores took up the music and sold in on a merchandising basis and the trade went where music could be bought the cheapest, not in the most dignified manner.

"The piano stores of fifteen years ago were exactly like the motor car stores of a few years ago. Each had its line, and sold that one line. The overhead was tremendous and piano prices were high. The loss of the sheet music trade was the best thing that has happened to the piano trade, because it was an education. It warned dealers later when the department stores threatened to take over piano selling itself.

#### Then Came Reorganization

"Then came the reorganization of the business which now appears to have been completed. Every piano merchant realized that he was in a fight for life, and he began to seek relief. He knew, just as we know to-day, that most people who spend several hundred dollars would rather buy of a specialist. But how could he meet the competition?

"He saw that the overhead must come down. But where was the waste?

"I don't know who saw it first, but the idea soon spread. 'Too many unsold customers.' No matter how much you advertise a certain piano—or motor car—you will not get the grade and cost firmly fixed in every one's mind. You might advertise Steinway pianos for years with, say, \$1,000 price attached, and you would have people come into the store who have the fixed idea that no piano is worth more than \$300 of their money. When you miss that sale, you have lost a part of your advertising return.

"So the mixed-price line came into being, and the factory store or agency disappeared to a large extent. In St. Louis there are now only two such stores, those of The Baldwin Co. and the Aeolian Co., and both of these firms make a list of variously priced instruments. They have pianos that sell as low as a worthy piano can be made, up to the special cabinets for electric players approaching \$2,000.

#### Must Have a Line

"Take the old houses that prided themselves on one instrument. They all have variously priced pianos from as many as half a dozen factories. So when their advertising brings a customer, they can sell him regardless of his pocketbook.

"I have been much interested recently in noting that automobile firms that, only a few months back, advertised only one motor car now are advertising two or more. It may hurt their pride a bit, just as it did the old piano men, to slight their 'leader,' but it makes for business.

"At one time the Kimball factory had

**H**ERE are some of the things that the piano trade long ago learned that the motor car trade is just now learning, presented by parallels:

**F**ORMERLY the piano trade employed musicians as salesmen on the theory that only a musician could sell.

**P**IANO TUNERS were formerly regarded as second salesmen and the best tipsters. Now tuners are employed for service only because they "foozled" so many opportunities.

**R**ICH MEN'S sons invaded the trade, thinking it a polite way of making a showing of work. They have deserted to the motor trade. A good riddance.

**F**OR SEVERAL YEARS the real salesman has been the king bee. He is only occasionally a musician, but he knows the inside of the piano, the qualities of the case, its comparative value to other pianos. He tells the truth. He has been taught to strike a few full chords or operate a player but he does not pretend to be a musician or a tuner.

**T**HE MOTOR CAR trade has employed drivers as salesmen on the theory that fancy driving was necessary.

**M**ECHANICS became the second line of automobile salesmen and in many places they are still holding on, but there is no denial that they "foozle" sales.

**T**HE RICH MEN'S SONS are with the motor car trade and are becoming a recognized liability.

**A**FEW SALES MANAGERS are beginning to realize the need of the man who is salesman first, who studies his car as to how it is made, the cost to operate, how it compares with other cars. He can drive as the ordinary man wants to drive, knows the engine fairly well, but when expert service is needed, he recommends a mechanic.

stores that sold the popular priced Kimball instruments. Now the Kimball stores that survive sell other makes, regardless of the fact that they are factory stores.

"The Estey line, a worthy 'one price line,' has given up the fight except in a few centers, and there usually other pianos are sold to vary the price list.

"There is another comparison that is worth while. When the player came, the piano men were slow to take it up. It was mechanical and appeared to be undignified. But it was forced on the trade, and now it is our main article of barter. The motor car trade, it appears to me, has turned up its nose at the truck. Mark my word—in a short time the truck will be supporting many a motor car salesroom, just as the player piano to-day is supporting many a dignified piano salesroom where only grand pianos for concert use are displayed—and very few are sold.

"There is one rather peculiar angle to this situation. The Steinway piano, which, for various reasons, is rather in a class by itself, recently has established some retail stores in cities where it appeared to be neglected and where it had an exceptional following. But even this exceptional instrument has recognized the player by permitting another firm's player to be put into it. Also in these stores established to protect its name, other pianos are sold at lower prices, to maintain the overhead.

"I cannot recall now, even in small towns, where there is a store that lives by selling one make of piano at a single

price only. All dealers have recognized the merchandizing idea, and no longer do you see dignified men in frock coats posing, merely because they conduct a piano store.

"This does not, of course, refer to the various one-line stores in piano factory cities where one-line stores are maintained as an advertising proposition solely and are used more as a show room for dealer customers than for retail buyers."

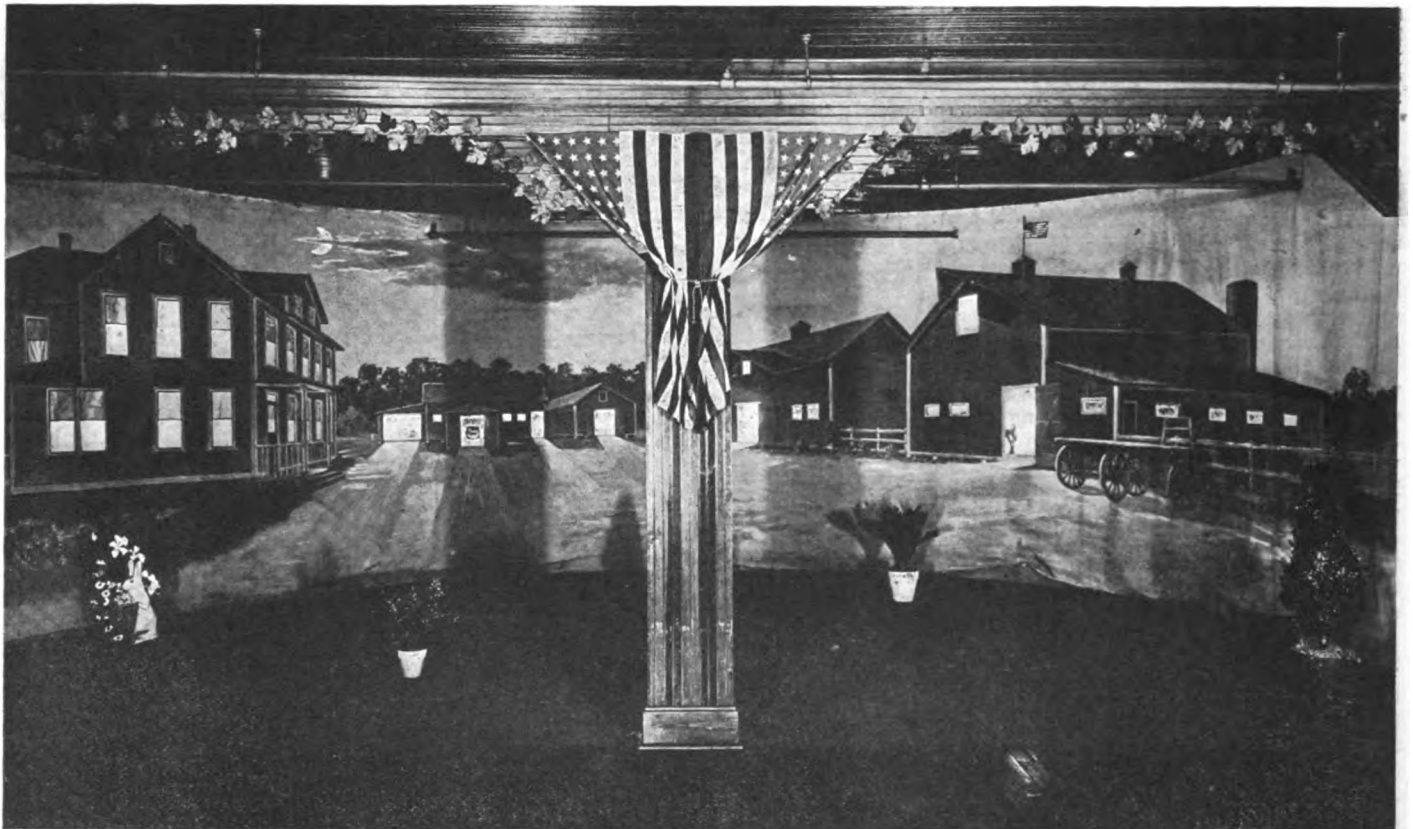
#### Salesmanship

You often will meet a piano sales manager who has been making piano salesmen out of men with selling ability who says, "There may be automobile salesmen, but I have never yet discovered one."

One such sales manager said recently, "I have bought six cars for this house, and I have not been sold a single one. When I wanted to know which was the best car for the man who made country trips and frequently had to bring back two or three people to see a piano, I had to find out for myself. When I wanted a car for city use, no one offered me intelligent advice. When I wanted an errand car, no one appeared to know.

"I would discharge a man instantly if he could not tell a flat dweller which of our pianos would be best for his use. I would discharge a man who would let a prosperous music teacher buy a cheap player instead of a grand, without very special reasons. I would discharge the salesman who sold a studio piano to an

(Continued on page 37)



*This is a painting arranged at one end of the salesroom in semi-circular form. Switches control the lights for the different sections. Switch by switch the scene is lighted, first the downstairs of the house, then upstairs, then the garage, and then, one by one, the different parts of the buildings. The light comes from behind through transparencies*

## Picturing Farm Light for the Farmer

*Instead of Trying to Get His Story Across by Words and Literature One Omaha Dealer Has a Miniature Farm-yard in His Salesroom and It Sells Farm Lightng Systems*

By George R. Savin

OMAHA, July 15—Ho, ye dealers in farm light systems! Ever make a sale by pushing a button? Or by crying, "Shame"?

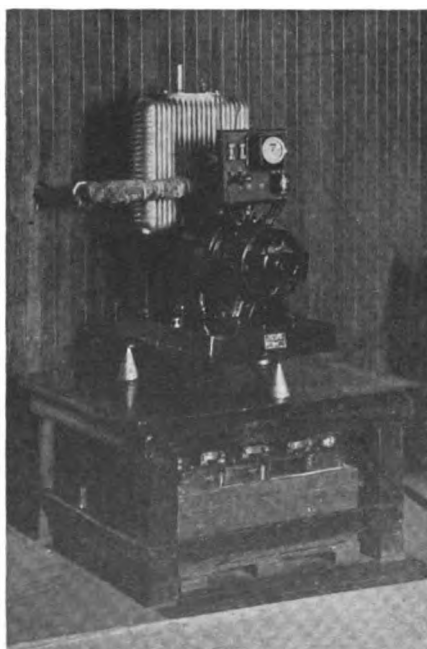
It's been done, and it pays big.

Fred L. Tubbs, vice-president of the Alamo Farm Light Co., conceived the idea two years ago. It has proven far and away the most successful sales stunt ever tried here. It comprises the essence of "showing" the customer. It delivers the goods during the sales talk. With the lifting of a hand it plants the K. O. that immediately precedes the ultimate "Sign here, please."

What Tubbs did was to set up a typical farm home in his salesroom, as shown with this story, so that the farmer gets the whole story in a few minutes, and in a manner so graphic that few words are needed.

Two years ago the Alamo Farm Light Co. was a lusty but struggling infant. Farm light systems had not as yet been well introduced to the farmers of this territory, and interest had to be first aroused and then cultivated.

There came a convention of farm im-



*After the farmer has seen the wonders that electricity can work he is marched up to the lighting unit and shown what a simple and economical thing it is*

plement dealers to Omaha. It was a national affair. The Rock Island Plow Co. of Omaha was handling the distribution of the Alamo plants for the Omaha territory. It has a big warehouse here. It was up to Tubbs to make a killing. He conferred with the Rock Island sales manager and they evolved the winning plan.

A room of the warehouse was cleared out, giving a space about 30 feet square for a demonstration exhibit. Then they simply had a stage setting made—a semi-circular canvas depicting a farm scene, with windows of the dwelling and outbuildings of semi-lucent paper. They didn't forget the moon either.

They strung their wires and set up a switchboard. A switch was assigned to each feature—first floor of the house, second floor, garage, horse barn, dairy barn, and all—and extra switches were provided for special features. It cost all told about \$300. They tried it out and then called in the dealers.

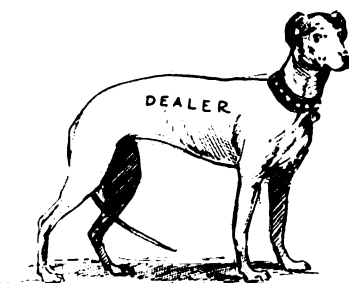
Now, the Alamo people had an excellent farm light system. The dealers never gainsaid that fact.

But the dealers were somewhat at a loss just how to develop the farmers' interest.



# Old Dogs and New Tricks

*By Ray W. Sherman*



**“W**HAT’S the matter with Louis Lamson?” inquired Tommy Trumbull, as he scanned the business troubles column of the morning paper and noted—but not with any great degree of surprise—that one of Callawassa’s oldest dealers had quit.

“Why?” Reilly also was not surprised at anything that might happen to Louis.

“Receiver,” replied Tommy, who managed the sales in Reilly’s Sennett agency. “Slipped off the map, I guess.”

“Oh—Louis has been slated for a long time. He couldn’t keep up,” stated Reilly. “He’s been slipping for a long time—and he couldn’t see it.”

“Poor business?” questioned the younger man—who still had hair, where the boss sported a rather rinky effect.

“Yes—I suppose folks will call it poor business,” replied Reilly, “but the great trouble with Louis was that he is one of the old cocks of the business and he never got started right. He is an old dog and he couldn’t learn the new tricks.”

“He started when you did, didn’t he?” asked Tommy.

## From Agency to Factory

“Yes, he started several years before I did,” said Reilly. “Louis started when the business was very young. He has been with it almost from the first. He has had various jobs and agencies. He has been from agency to factory and from factory to agency—and now I suppose he’ll wind up somewhere as a factory road man—although he’ll find it harder than ever now to line up with any factory.

“Factories are becoming somewhat particular as to the kind of men who represent them. They want something more than mere men of experience. They

want live, aggressive, business building men—and Louis isn’t in that class. He could get there if he wanted to—but, as I said before, he needs to learn a lot of new tricks and I’m afraid he’s too old a dog.”

“That’s too bad. I always liked Louis,” was Tommy’s comment.

“Everybody likes Louis,” declared Reilly. “In fact, if he were not such an agreeable sort of fellow he might get along better. As it is, he has such a fine, easy time mixing with the world that he doesn’t get stirred up to the need for real action.

“You know, Tommy, there is a lot of old dogs in this business, and, while many have gone by the boards there is a lot left. They’ll never be leaders any more. They learned the superficial formula of success in the days when the real, fundamental formula wasn’t necessary, and they are still trying to get by on the old stuff, and on prestige and name, in a day when real business men are the only ones who count.

“Back in the early days, Tommy, there grew up a certain set of trade leaders. Some of them were racers. Some were dealers. Some were managers and promoters. Others were in different lines. They began in the days when the car was a new thing. Folks bought cars, not knowing anything about them. The men who sold them didn’t have to know much about cars either.

## It Was Easy Money

“In those days the business was pretty much the game that some of us call it to-day. It was easy money. Because it was so easy there grew up a certain set of men who, for a time, got by and were on the road to money and what seemed to be success. Their names became

known throughout the industry. The newspapers carried publicity about them. They were leaders in the newest, biggest, most spectacular industrial whirl the world had ever seen. They were at the top in a movement that was revolutionizing human life and setting the clock of civilization ahead by centuries.

“They had their opportunity—but they missed it. Some of them saw that the car was destined to become a commercial and not a sporting proposition. A few saw far enough into the future to realize that the time was coming when cars would be sold in a real business way, through real salesmanship and not by hurrah and hullabaloo and cocktails.

## They Worked Hard to Succeed

“These men are our trade leaders to-day. They built on solid foundations. They remained leaders in the business because they kept up with the business as it became a business and not a game. They developed business and sales and service methods. They copied the good ideas of others. They worked hard to succeed. They learned the new tricks as fast as they appeared and developed a few of their own.

“Meanwhile the old cocks continued to try to get away with the old stuff. Gradually the business began to be drawn to the dealers who were keeping up with progress. Once in a while one of the old boys—most of whom are still young in years—would go out of business. He might have his agency taken away from him, or he might throw it up and take another, saying the agency he had was no good.

“Or perhaps the man would relinquish his agency and take a job with a factory. He made the shows in the winter and traveled around among the dealers the rest of the time. He wasn’t very constructive and he didn’t do a great deal to help make the company’s dealers better producers.

“These men didn’t rise. They drifted from point to point—but always in the same plane. They never got above their original level.

“Yet, despite their failure to progress, they continued to believe themselves

*(Continued on page 37)*

# EVERYWHERE

## DEALERS GET BEHIND THE N. A. D. A.

Association gets strong support from Ohio, Indiana, Minnesota, the Dakotas, Iowa and other sections—Meetings scheduled in Boston, Buffalo and Newark

**T**HE West during the past week has helped roll up the growing membership of the National Automobile Dealers' Association.

Ohio, Indiana, Minnesota, the Dakotas and Iowa gave many members in response to the appeals of President F. W. A. Vesper and Executive Secretary E. E. Peake.

Reports from the headquarters office at 3550 Lindell Boulevard, St. Louis, and from the office of Executive Secretary Peake at 909 Gloyd Building, Kansas City, are that the country generally is responding in a gratifying manner. From isolated towns, in no way connected with the centers where big meetings have been held or are scheduled, come memberships sent in by individuals who express appreciation of the efforts of the president and directors. Everyone seems anxious to give the movement strength in the face of events which impend.

### Vesper to Go to Washington

President Vesper is considering further visits to Washington as a result of the recent announcement of the Treasury Department relating to taxes on the motor car business. The dealers have thus far tried to guide official action into such channels as will yield a maximum revenue without unduly throttling business, and, while they advanced certain constructive plans to the Ways and Means Committee, which must frame the new revenue bill, they fear lest certain officials may favor legislation that would be almost prohibitive of business and thus render the tax law useless from a revenue standpoint.

*The situation renders still more neces-*

*sary the association's plan for 5000 members in 90 days. The directors want the strongest possible backing when they go to Washington in the near future.*

Last week Tuesday in Cleveland the distributors staged a meeting which was attended by northern Ohio dealers. Nearly 100 joined the National and all endorsed the association's war conservation measures. The Ohio Buick Co. at the meeting turned in 50 of its dealers as members. The meeting was addressed by Executive Secretary E. E. Peake, Manager Alfred Reeves of the N. A. C. C., Walter D. Meals, counsel for the Cleveland dealers and a member of the committee which recently appeared before the Ways and Means Committee of the House of Representatives, and Ray W. Sherman, editor of Motor World.

### Indiana Dealers Join

In Indianapolis Wednesday President Vesper and Executive Secretary Peake enlisted the support of nearly 100 Indiana dealers from all parts of the state. All the Indianapolis dealers are members, and at the meeting men joined from the following Indiana towns:

Shelbyville, Edinburg, South Bend, Fort Wayne, Tipton, Martinsville, New Castle, Cambridge City, Linton, Washington, Richmond, Logansport, Rushville and Decatur.

Noblesville, Princeton, Monticello, Francisville, Wabash, Madison, Evansville, Greencastle, Mooresville, Greensburg, Peru, Boswell, Liberty, Terre Haute, LaFayette, New Augusta and Seymour.

Brazil, Frankfort, Lebanon, Anderson, Batesville, Farmersburg, Columbus, Midletown, Muncie, Crawfordsville, Throntown, Mitchell and Hagerstown.

Vincennes, Pittsboro, Kendallville, Mount Vernon, Rossville, Bluffton, Danville, LaPorte, Converse and Rochester.

Many of these towns sent one delegate only, and these men generally asked for application blanks and said they would, after their return home, send in the memberships of all the other home-town

dealers. Following President Vesper's address on the war situation as it affects the dealers, he was hemmed in for nearly an hour by dealers who earnestly asked him questions about business and the Washington situation.

From Indianapolis Vesper and Peake went to Chicago, where a meeting of the Membership Committee was held Thursday, and another is scheduled for July 30.

Last Friday the biggest dealer meeting ever held in the United States was staged in Minneapolis, where more than 1000 dealers from Minnesota, part of Wisconsin and North and South Dakota gathered to hear Vesper and Peake. More than 200 members joined at the meeting, which, added to 150 previously sent in from the Northwest, makes nearly 400 members already from that territory—and more are expected. The Northwest distributors had sent their wholesale men out to gather support for the association. As usual the conservation plan was endorsed.

At Fort Dodge, Iowa, Saturday night 100 dealers from northern Iowa gathered to hear the story, and 42 enlisted their support as members. Des Moines held a meeting this week Tuesday night, at which the association received strong support.

### Only Dealer Eligible

The headquarters office of Executive Secretary Peake in Kansas City reports that dealers from many points are asking about individual memberships. When the association was first formed the by-laws provided that a member must first be a member of a local association, but they were changed early in the history of the association so that any dealer in cars may now become a member by sending his check for \$15 and evidence that he is a car dealer. He may sell trucks, run a garage or do anything else, but if, in addition, he sells cars, he is a car dealer and eligible for membership.

*The \$15 covers \$5 membership fee and \$10 for the annual dues. These may be sent to the St. Louis headquarters at*

## *What Is Doing in the Membership Campaign of the* **National Automobile Dealers' Association**

*To arrange meetings, correspond with association  
headquarters, 3550 Lindell Boulevard, St. Louis*

### Meetings Scheduled

Buffalo (Western New York) .....	July 23
Newark (All New Jersey) .....	July 24
Boston .....	July 26

### Meetings Held Previously

Pittsburgh (Western Pennsylvania), 208 joined .....	June 27
Harrisburg (Central Pennsylvania), 40 joined .....	June 28
New York (Metropolitan territory), 125 joined .....	July 1
Philadelphia (Eastern Pennsylvania), 100 joined .....	July 2
Cleveland (Northern Ohio), 87 joined .....	July 9
Indianapolis (All Indiana), 80 joined .....	July 10
Minneapolis (Minnesota and Dakotas), 350 joined .....	July 12
Fort Dodge, Iowa (Northern Iowa), 42 joined .....	July 13
Des Moines, Iowa (Central Iowa) .....	July 15

In addition, many individual memberships have been received through the mails, which procedure is earnestly recommended by President Vesper and Executive Secretary Peake.

**3550 Lindell Boulevard or Peake's headquarters at 909 Gloyd Building, Kansas City.**

Ellis, Kan., reports: "We have already made a personal solicitation and will be able within the next few days to report to you the number of members secured."

#### Many Towns Active

Frank Hathaway, Muskegon, Mich., has sent letters to all of his organization and expects to report members in a few days.

Hermann, Mo., "will use all possible means to get the drive started at the earliest possible date. Have already sent letters to dealers."

H. H. Heaps, Hutchinson, Kan., reports: "Herewith four more applications for membership in the National Automobile Dealers' Association. We have one or two dealers in our county who up to date have not joined, but we expect to get them in the near future." Nine had joined previously.

H. B. Kuder, of the C. M. Ritchey Motor Car Co., Joplin, Mo., accompanies his memberships with this statement: "We figure it is a pleasure to have the privilege of becoming a member of the National Automobile Dealers' Association, as we want to become a part of the organization that has been able to do the things that are set forth in your folder."

"We would like to have a poster or

identification card that we might display in our window, showing we are a member of the National Automobile Dealers' Association." The dealers in Erie, Pa., also made a similar request. An identification document will be issued shortly.

At St. Joseph, Mo., Mr. Lawler has sent in 17 memberships.

The secretary of the Richmond, Va., association reports: "At the last meeting of our local association with 75 per cent of the members present the writer secured a pledge from every man present that he would join the National Automobile Dealers' Association, and the boys are very enthusiastic over the live-wire manner in which you gentlemen have gone after this thing."

#### Local Campaigns Under Way

A. W. Johnson, Jacksonville, Fla., writes that the membership campaign will be put under way at the next meeting of the dealers.

R. E. Arnold, of the Arnold Automobile Co., Wichita, Kan., writes that Sunday and holiday closing is all lined up, and that E. P. Hayes is taking care of the membership work.

Waterloo, Iowa, after having come in with 100 per cent of its members, has gotten in touch with Cedar Falls and has started the membership and conservation movement there.

Cincinnati has appointed the following committee to help carry out the war con-

servation recommendations: F. H. Walley, Winton Co.; E. A. Kruse, Kruse-Garlick Co., and Charles Schiear, Schiear Motor Car Co. Each Cincinnati distributor is sending literature, letters and membership blanks to all his dealers.

Hiawatha, Kan., through Chairman George Dodson, says: "The committee accepts the job and will call on every dealer in the county and solicit their membership blanks to all his dealers throughout the country."

#### County Chairmen Work

Hempy Reed, Ottawa, Kan., writes: "We accept the appointment as county chairman and shall give our best efforts in behalf of this undertaking."

John Koppes, Barnes, Kan., has accepted the appointment as representative in Washington County, and E. L. Gray, president and manager of the E. L. Gray Implement Co., Jewell City, Kan., has undertaken to handle the work in Jewell County.

F. J. Daniels, Independence, Kan., has been made chairman there and speaks promisingly of the possibilities.

In getting his work under way, Chairman E. R. Phillips, Plainville, Kan., says: "I agree with you in that part of your letter wherein you state that the only way in which we can safeguard the future of the automobile business is through the influence of the National Automobile Dealers' Association. The

hardware dealers have also found this to be true in their line."

E. C. Miller, Council Grove, Kan., expects to send in 12 memberships.

J. Lloyd Prunty, Wamego County, Kan., has accepted the appointment as county chairman.

Individual memberships have been received from many Kansas towns through the campaign instituted by the Kansas City distributors, who have organized the territory on a county committee basis.

#### 1000 Northwest Dealers Hear Vesper

MINNEAPOLIS, July 15—More than 1000 Northwestern dealers attended a meeting in the assembly room of the Minneapolis City Hall, July 12, addressed by F. W. A. Vesper, president of the National Automobile Dealers Association and E. E. Peake, executive secretary. J. A. Graham, director in the association, was chairman and F. E. Murphy, secretary of the Minneapolis Automobile Trade Association, drove home the facts given by the speakers in an appeal to the automobile men to join. One hundred and fifty members were found in the meeting when it opened and the net result which will be available is estimated by Mr. Peake as 500. He said the meeting was the largest of retail automobile dealers that ever had been held. The next stop of the two men was Fort Dodge, Ia.

#### Boston Meeting July 26

BOSTON, July 13—A meeting of automobile dealers from all over New England has been called here for July 26, when President F. W. A. Vesper of the National Automobile Dealers' Association will be present and explain how the men identified with the selling interests of the industry can cooperate with the Federal Government and at the same time benefit themselves.

It is planned to make New England 100 per cent perfect as far as organization is concerned in joining the national organization. And to do this a committee has been appointed here to work out plans.

This committee comprises John H. Johnson (Buick), a director of the association; Joseph S. Donovan (Studebaker), R. B. Nettleton (Chandler), F. W. Stockbridge (Winton), J. M. Linscott (Reo), J. James MacGregor (Oldsmobile), A. L. Danforth (Cadillac), and L. B. Sanders (Oakland).

They plan to hold meetings daily to get things in working shape, and to try to get a large throng of dealers here on July 26. Working at first through sub-dealers, they will then take up the work of individuals, and see that all the men selling cars and trucks in New England are given an opportunity to work for the benefit of the entire industry.

At the meeting called to organize the committee to secure membership in the big association, Joseph S. Donovan, who represented the Boston Automobile Dealers' Association, at the hearing at Washington, made a report, and he urged the necessity of the dealers everywhere getting together.

A sub-committee comprising Messrs. Danforth, Sanders and Nettleton has been chosen to give the matter publicity. This committee held a meeting yesterday at which it had the motor editors of all the Boston newspapers on hand to discuss ways and means to make the meeting July 26 a success and to get dealers here.

In addition to the dealers it is proposed to invite Senator John W. Weeks, Senator Henry Cabot Lodge, and Congressman James A. Gallivan, Peter A. Tague, George N. Carter, Richard Olney and James Phelan, the latter five representing the Eastern district of Massachusetts. Dealers from other cities who are coming, and who know their congressmen, will be asked to invite them to attend the meeting.

#### 200 Members Last Week

ST. LOUIS, July 15—The N. A. D. A. reports more than 200 new members registered at headquarters here during the past week. This does not include any reports from President Vesper and Executive Secretary Peake, who are attending several meetings in the Northern States, from which good reports are expected on their return.

A peculiar feature of the membership this week is that they are chiefly single applications, from here, there, and everywhere.

It recently has developed that the greatest drawback to obtaining memberships was the widespread belief that membership in the National Association was limited to delegates from local associations. This was true of the National Association as it was organized several years ago, and this course was continued until the reorganization, about the time the United States entered the war.

Then it was realized that united effort, backed by the great number of motor-car dealers, was required to meet the emergencies, and the association was reorganized, and every dealer invited to come in and help save his own industry. The dealers have been responding freely. In many cases, distributors have, by properly presenting the question, brought their sub-dealers into the association 100 per cent.

Assistant Secretary Holke has undertaken an educational campaign on this point. His future propaganda material will bring this to the attention of dealers, so that they may have no excuse for not joining. It has been found that many have been deterred from entering the association for this reason alone.

#### Tire Man "Gets In Line"

MILWAUKEE, July 15—An advertisement reading, "Beginning immediately, Curtis Rubber Co., Jefferson and Bidle Streets, will close its store at 6 p. m. sharp daily," and published in the daily newspapers of Friday, July 12, is believed to mark the close of the most interesting incident of the war conservation program in Milwaukee, and suggests that the motor car, supply and tire industry of this city is now on a 100 per cent war basis.

When President W. A. Vesper, of the National Automobile Dealers' Association, appointed Alfred Reeke, Milwaukee, as state representative of the war conservation committee. Reeke succeeded in inducing all dealers, garagemen, tire sales and service stations, etc., with one single exception, to adopt the rules curtailing free service and enforcing early closing on weekdays, and full closing on Sundays and holidays. The single exception was the Curtis Rubber Co., which became a militant insurgent and questioned the right of Director Reeke, President Vesper and the N. A. D. A. to enforce the rules. As already noted, the Curtis company published a full-page display advertisement, quoting a letter from Director Reeke, in which he asked that non-observance of the regulation be discontinued, and also the Curtis company's answer, in which the source of authority for the regulations was demanded, and the declaration made that the Curtis station would be open 24 hours a day, as in the past.

For a week or 10 days nothing was heard about the incident until on July 12 the Curtis company's advertisement appeared. The advertisement was not unexpected, for predictions were made that within a short time Milwaukee would be able to report that it was "100 per cent" in observance of the war conservation program. Now no one questions the authority of the N. A. D. A. to enforce the rules and regulations.

Milwaukee garagemen and tire dealers are pleased over the fact that hours of service have been curtailed. As the outgrowth of keen competition practically all have been open 24 hours a day for years. "Now," says one of them, "we at last have found time to get acquainted with our families."

#### "Modified" War Service for Los Angeles

LOS ANGELES, July 12—The Motor Car Dealers' Association of Los Angeles has adopted a modified war-time service policy that "recommends" but does not order any drastic change in former arrangements. Practically every dealer here has been issuing a free service coupon book. These have been discontinued for the future but dealers will honor them to owners who bought cars at a time when the coupon books were not taboo. Legal advice was to the effect that an owner would have the right to regard such a system as a contract obligation on the part of dealers.

When the proposal was made to close all salesrooms on Sundays and holidays, there was a willingness shown to adopt such a plan, but as relating to the new car sales business only. It was pointed out that Sunday has become the best day in the week for disposing of used cars, and some dealers who were very desirous of having new car salesrooms closed on that day positively refused to extend it to their used-car departments.

Truck dealers said they could not close their service and repair departments as the truck was to be considered in the

(Continued on page 39)



# Introducing Socialism Into Selling

1—Employees form a club.

2—Club forms committees.

3—Committees:

a—Evolve plans.

b—Settle disputes.

c—Boost business.

4—Manager watches and approves.

The Studebaker Branch in Detroit is organized along club lines and the employees have an active part in making themselves work.

EVERY Monday morning promptly at 8:30 o'clock, in a room arranged for the purpose, the Big-ger Business Club of the Detroit branch of the Studebaker Corp. meets.

The purpose of the club is to promote bigger business, and the success of the club is evidenced by the fact that it has been in existence more than a year and a half, having been organized in October, 1916.

On the theory that a group of salesmen can work together more profitably through organized effort the members of the Studebaker retail organization formed the club for the purpose of finding ways and means to promote greater business.

It was not the intention of the club, however, to run the branch, but merely to offer suggestions for the betterment of the business it represented; these suggestions are presented to the management to be acted upon.

In a measure, it may be said that this club runs the business, although it does not assume any control nor does it interfere with the management. In other words, it is within the province of the club only to make recommendations for improving the business and suggest ways for handling it more efficiently.

Promoting bigger business is not taken to mean only the devising of schemes and plans for gaining new business, but is also interpreted by the club as signifying a desire to eliminate any obstacles that may hinder the organization from attaining sale increases.

The club membership is composed of all the salesmen of the branch. Three committees of three members each are appointed to act as advisory committees. When the club was formed there were five committees, but the duties of the courtesy, efficiency and grievance committees were later embodied into one and it is now known as the efficiency committee.

It is the duty of the efficiency committee to:

1—Find ways and means for bringing new business and securing new prospects.

2—Suggest methods for the conservation of salesmen's time.

3—Make suggestions for arranging demonstrations.

4—Arrange lessons to customers.

5—Make plans for listing and canceling prospect cards.

6—Adjust all misunderstandings between club members regarding prospect cards and sales.

7—Bring to the attention of the club better methods for co-operation in caring for prospects or customers.

8—Attend to other matters pertaining to salesmen's work.

## Duties of Committees

The duty of the used-car committee is to confer with the used-car manager and bring to the attention of the club ways and means for the promotion of used-car sales.

An entertainment committee is appointed to devise plans for such entertainments as are voted by club members.

Whenever a dispute arises among salesmen concerning a prospect—for instance, if two men are working on the same prospective buyer and each believes he is entitled to the commission—the matter is immediately taken up with the efficiency committee. This committee is called, similar to a court, to sit in the case, and the decision arrived at establishes a precedent by which future cases are decided. All decisions, of course, are subject to the O.K. of the management.

If a member of the efficiency committee is absent a substitute is appointed.

Should a member of this committee be involved in the case a suitable substitute is appointed.

Most difficulties arising among salesmen pertain to the claiming of prospects. It was agreed that names of prospects be kept in a salesman's file for a period of 30 days, after which time the name must be transferred to the open file and published—that is, put up on the bulletin board. After a lapse of seven days any salesman has a right to list and sell any prospect that he had selected from this published list.

Sometimes men have names on the prospect list but fail to call on them. Another salesman, ignorant of the fact that the prospect is already listed, calls on him and sells him. The question arises who is entitled to the commission. Matters like these are decided by the efficiency committee.

Everything that makes for improved conditions and better business is recommended by the efficiency committee. To show the scope of the activities of the club we shall cite a few. It was suggested that one man be appointed to make deliveries.

Although there were two men employed at the branch to make appraisals of used cars they both went out to lunch at the same time. The club recommended that one stay on the job to take care of these matters during noon hour until the other came back.

Owing to the difficulty experienced in obtaining cars for demonstrations at noon, suggestions were offered to remedy this. The club also found it advisable to post daily sales on the sales floor. The club took an active part in the sale of Liberty bonds.

The organization has a clubroom and a lounge room for its members, where papers and magazines are supplied. One feature which assures full attendance at the meetings is a 25-cent fine for the late comers. Dues of 25 cents are collected each week.

The present officers of the club are: C. R. Johnson, president; William Goebel, secretary, and G. Rush, treasurer. These men hold office for a period of 6 months.

## THE DEALER

*who isn't equipped with  
stock for quick delivery*

*is a 30x3 merchant in  
a 37x5 town*

# La Crosse Model F Happy Farmer Tractor Supersedes Models A and B

## *Larger Engine, Longer Frame and Automatic Fuel Change*

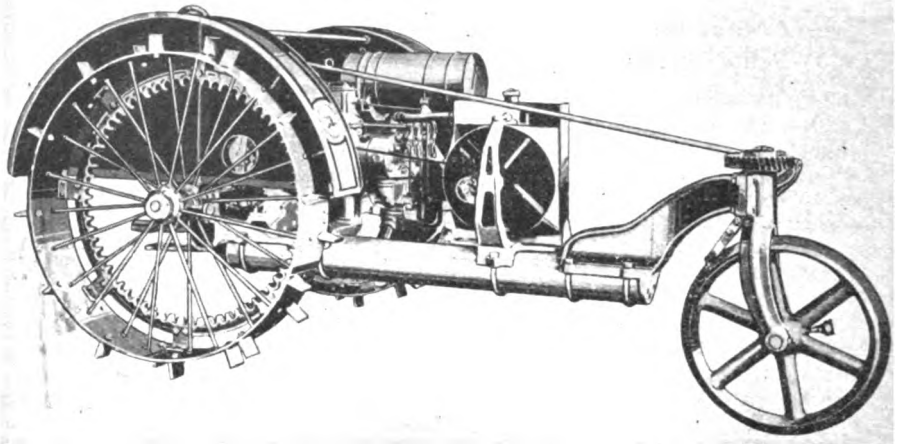
THE La Crosse Tractor Co., La Crosse, Wis., has brought out a new model of the Happy Farmer tractor known as the Model F, the previous models A and B having been discontinued. The new model retains the basic La Crosse features of twin-cylinder horizontal engine, three wheels, short turning radius and light weight, but has numerous improvements, the engine being larger and more powerful, longer frame-pipe member, increased length overall, redesigned cylinder head with the combustion chamber entirely within the cylinder, primer for starting, change-over device from gasoline to kerosene which is almost automatic, and a completely new oiling system which uses the lubricating oil three times and obviates the necessity of draining the crankcase. A centrifugal air cleaner of novel design has been added as regular equipment.

The engine is designed especially for the burning of kerosene and has a normal speed of 750 r.p.m. It starts on gasoline, a primer shooting a spray of atomized gasoline directly into the combustion chamber. A switch on the engine is turned on, and under the compression a jet of gasoline is forced into the combustion chamber by a plunger. Another turn of the flywheel and the engine starts.

### **Automatic Fuel Change**

The change from gasoline to kerosene is practically automatic. A device which is operated from the driver's seat screws down the needle valve in the carburetor so that it is not flooded during starting and does not have to be drained. After the engine starts the needle valve is released and the engine begins using kerosene directly from the carburetor without further manipulation.

The intake manifold is very short and is surrounded by the exhaust. After the engine has been running a few minutes the manifold becomes so hot that vaporization of the kerosene is assured. The opening of the intake valve is retarded until a vacuum can be formed in the combustion chamber and the vaporized kerosene rushes in with such speed that it has no time to re-condense. The fuel enters the combustion chamber at a temperature from 40 to 50 deg. higher than atmospheric. The exhaust system is integral with the frame and is relatively noiseless.



*The new Happy Farmer tractor has a twin-cylinder horizontal engine especially designed for burning kerosene*

### *Specifications of the Model F*

Fuel: Kerosene.  
Horsepower: Belt 24 at 750 r.p.m., draw-bar 12 at 2½ m.p.h.  
Engine: Twin-cylinder horizontal, cast in block, 4 cycle, speed 750 r.p.m., cylinders 6 x 7 in., force-feed lubrication, die-cast, bronze-backed bearings, overhead valves 2½ in. diameter, fly-ball governor, Atwater-Kent ignition system with automatic advance, 1½ in. Kingston carburetor.  
Gearset: Sliding, enclosed and running in oil; roller bearings.  
Final Drive: Roller pinion with pack hardened rollers and pins.  
Cooling: Circulating pump, Spirex Modine radiator and fan. Capacity 9 gal.  
Fuel Capacity: Kerosene 13 gal., small gasoline tank for starting only.  
Outside Dimensions: Length 153 in., width 32½ in., height 62 in.  
Wheels: 2 rear traction 56 x 10 in., 1 front 31 x 5 in.  
Clutch: Contracting band.  
Bull Gear: Semi-steel, 4 segments, reversible and interchangeable.  
Pulley: 11 in. diameter, 7½ in. face.  
Weight: 3800 lb. complete.  
Steering: Automatic from front wheel in furrow.  
Price: \$1,075 f.o.b. factory.

The crankshaft is drop forged with two main bearings lubricated by centrifugal force through holes drilled in the shaft to the bearings. Lubrication is by force feed from a Madison-Kipp 5-feed oiler driven by belt. A single pressed steel oil ring is centered on the crankshaft midway between the two bearings. In appearance this resembles two eccentric concave disks joined together on their

concave sides. This ring is fitted with a double flange on its periphery. As the oil is fed to this ring in a jet from the oiler, it is thrown by the eccentricity of the disks first to one side of the ring and then to the other. At the periphery it is caught by the double flange and is fed by centrifugal force to the center of the main crankshaft bearings through holes drilled in the crankshaft.

From the main bearings the oil goes to a receptacle at the bottom of the crankcase, protected by baffle plates from contamination by any kerosene which may have passed by the piston rings, so that no oil mixed with kerosene touches the connecting rod bearings. From this receptacle the oil is drained to the gear cases, and, after being used there, is mechanically conveyed to the final roller drive pinions. This uses the oil three times and at no place in the system can it be mixed with kerosene.

### **Details of Transmission**

The clutch is of the contracting-band type. The gearset is a sliding gear type, enclosed and running in oil, with Hyatt roller bearings. Differential and final-drive bull pinions are mounted on a jackshaft. The differential ring-gear is not integral with the spider but is a semi-steel ring with cut teeth. For assistance in turning in a short radius, a differential brake is used. The differential gears are enclosed in a dust-proof case and run in oil.

Final drive is through open bull pinions on a jackshaft with ¾-in. heat-treated steel roller pins meshing with an internal sectional bull gear on the drive wheels. The gear ratio is 42:1. The bull pinions are protected only by mud guards, but are lubricated mechanically with oil conveyed from the gear cases.

The bull gear is cast semi-steel in four segments, which are reversible and interchangeable and are attached to the wheels by  $\frac{1}{2}$  in. drive-fit bolts to insure their not working loose.

The frame of the Happy Farmer is a solid piece of cast steel, annealed, and provides a foundation for the whole machine. The front extension is pipe, supporting at the front end the cast bracket to carry the steering-wheel yoke. The steering rod carries a worm at the front, which meshes with a gear at the top of the steering-wheel yoke. The steering wheel and the right drive wheel run in the furrow and steering is practically automatic when plowing. The steering wheel is fitted with a removable bushing.

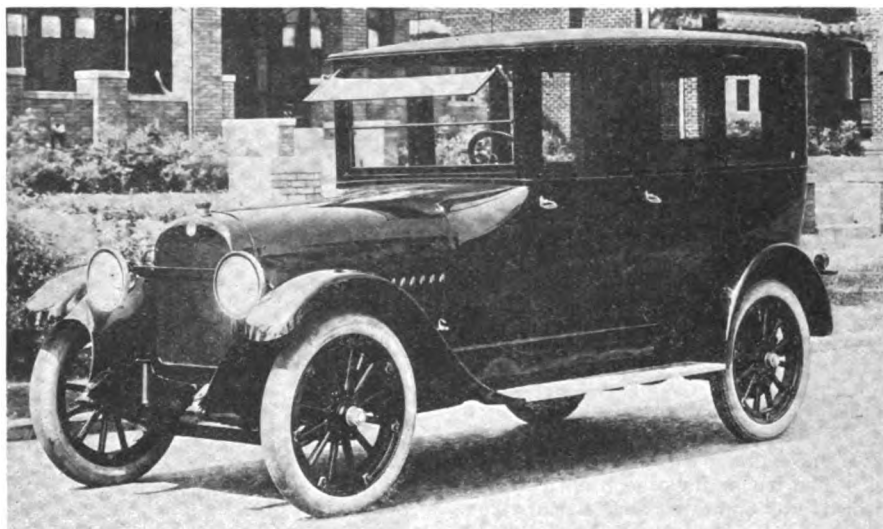
The centrifugal air cleaner is a cylindrical dipper-shaped device, the large open end of which is held against the radiator opposite the hub of the fan by a spiral spring. The cylindrical tube of the cleaner connects with the carburetor intake.

Air is drawn through the radiator and the theory is that the centrifugal force of the fan cleans it of all dirt, dust and grit by throwing these substances to the outside, leaving the air around the hub clean and pure. The air is slightly warmed during its passage through the radiator.

The Model F sells for \$1,075, f.o.b. La Crosse, and is marketed exclusively through distributors. Production for the current year will be about 4000.

#### "Last Blood" This Month

PHILADELPHIA, July 12—Philadelphia and New York Automobile Trade golfers are now even in their series and the deciding match will be played late this month at Shawnee-on-the-Delaware. The Philadelphians won in the matches played here at the Whitmarsh Valley Country Club and the New Yorkers went over the top at the Wykagyl Country Club Links.



Type of sedan body mounted on the four- and six-cylinder Studebaker chassis

#### New Studebaker Sedan

SOUTH BEND, IND., July 12—The Studebaker Corp. has added a sedan to its series '19 models, and this will be fitted to both the four and six-cylinder chassis, the four listing at \$1,685 and the six at \$2,185. There is practically no difference in the two bodies, both seating five passengers. Upholstery is high grade cloth laid in parallel pleats, and equipment includes a dome light, silk roller curtains, door locks and a three-piece windshield with adjustable visor. The finish is Studebaker blue with the chassis and upper half of the body black.

#### No Night, Sunday or Holiday Service for Car Owners

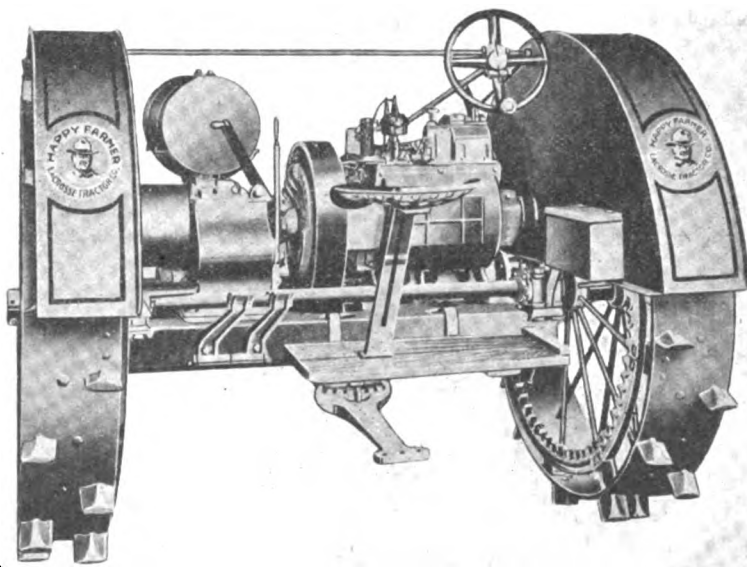
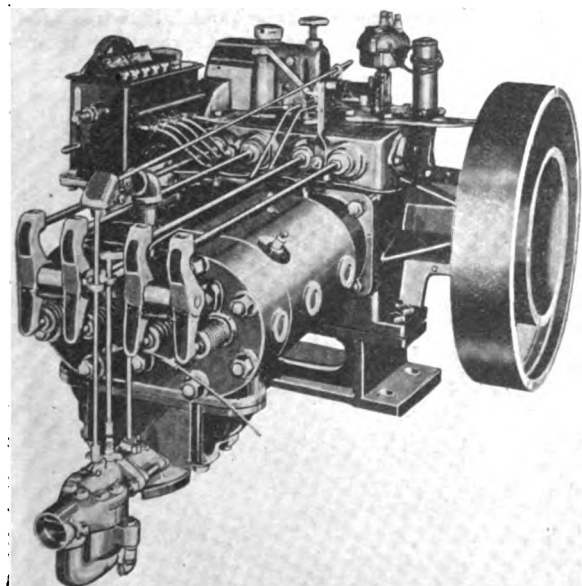
DETROIT, July 12—The Detroit Automobile Dealers' Association has adopted a resolution that service stations and repairshops shall discontinue all night, Sunday and holiday service and close all

shops at 6 p. m. daily. This war-time policy is effective to-day.

Arrangements have been made whereby night emergency service that is absolutely necessary may be obtained at four selected garages in various parts of the city. These garages will not make extensive repairs, but will merely help the owner out of trouble and in emergency cases, where it is necessary to keep the car over night, will see that it is delivered to the proper service station the following morning.

#### Hardcastle and Rochette Partners

BUENOS AIRES, ARGENTINA, June 1—P. A. Hardcastle, Overland distributor for Argentina, has formed a partnership with E. Rochette, who was formerly in charge of the Overland business for all South America. For over 2 years Rochette has been making his headquarters in Buenos Aires. Hardcastle will continue actively in the business, as formerly.



The new engine used in the Happy Farmer tractor, and a view of the operator's seat and arrangement of the controls

# New Bethlehem Truck Line in Three Chassis Sizes

*Deliveries of 1½-, 2½- and 3½-Ton Models Start This Week*

ALLENTOWN, PA., July 15—Three new models have been developed by the Bethlehem Motors Corp., and manufacture has progressed to such an extent that deliveries of at least two of the models to dealers will be possible this week. The trucks have been entirely redesigned and embrace such features as electric starting and lighting, radiators of distinctive design with cooling fins on the top tanks, and a driveshaft steady bearing to keep the driveshaft from whipping. The line will represent the 1918-1919 Bethlehem production and the models are:

Model D-1.....1½ tons capacity

Model E-1.....2½ tons capacity

Model F-1.....3½ tons capacity

Each model is identical in design, but in no instance is the size of a particular part the same in the different models, the sizes being proportioned to the work they have to do and the strains they have to endure.

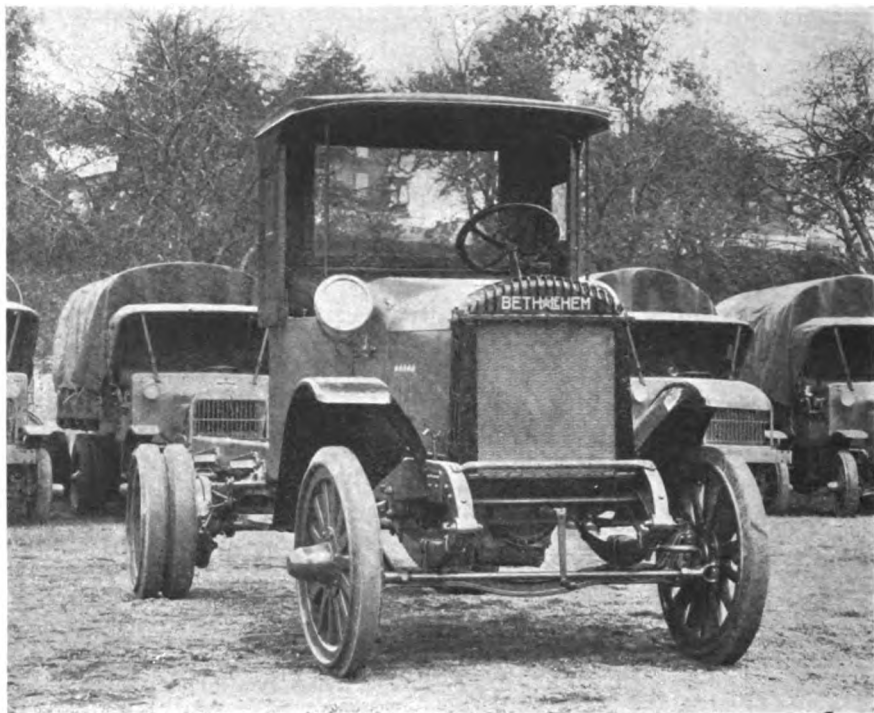
## Power Plants

The engines of Models D-1 and E-1 are identical with the exception of the cylinder bore, which on the 1½-ton model is 3¾ in. and on the 2½-ton model 4 in. The stroke is 4½ in. in both cases. The crankshafts are 3¾ per cent nickel steel, ground and hardened. The cylinders and pistons are ground to close limits and the valves are of the same material as the crankshaft. All bearings are interchangeable and readily accessible. The intake and exhaust manifolds are cast together and there are four hot spots, enabling the lower grade fuel to be used without any change in the carbureter. Standard equipment on the engines in-

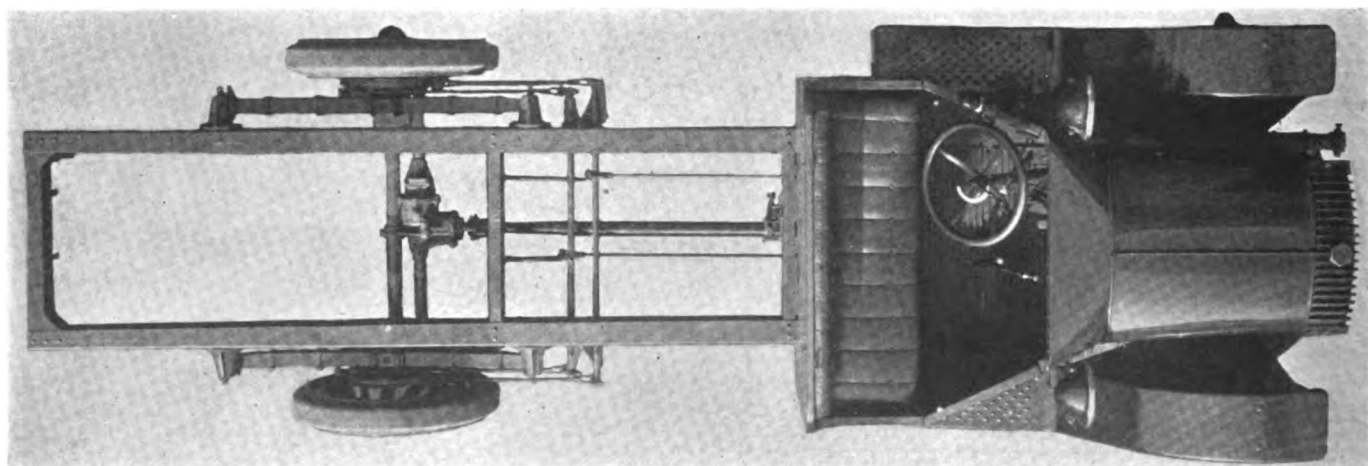
clude Schebler carbureter, Monarch governor and Atwater-Kent ignition system. The engine on the Model F-1 has a bore of 4¾ in. and stroke of 6 in., and is similar in design to the others, the only difference being in the bore and stroke and the size of the parts.

All the models are equipped with a

Gray & Davis two-unit starting and lighting system with Bendix drive to the flywheel, and a Willard storage battery suspended in a mounting identical with that adopted by the Government and used on the Liberty trucks. All wiring is of brass-armored type and all wires are clipped at intervals not exceeding 18 in.

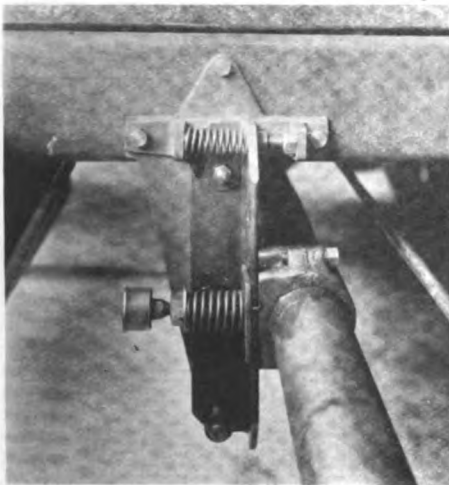


*Front view of the Bethlehem chassis, showing the distinctive-type radiator. The three models are identical in design, differing only in the size of parts*

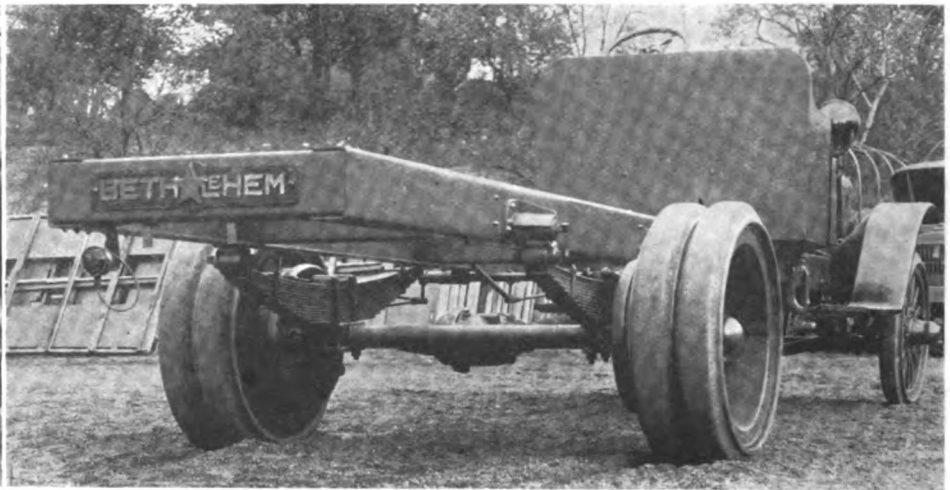


*Plan of the Bethlehem chassis. The three models are equipped regularly with electric starting and lighting systems, and the same battery mounting as that on the Liberty trucks is used*





*The intermediate propeller shaft bearing which prevents whipping*



*Rear view of the Bethlehem chassis. Drive is through an internal-gear drive rear axle, and the propeller shaft is of floating type*

The storage battery also supplies the ignition current.

The radiators are a distinctive feature, are of Fedders make and are armored. The top and bottom tanks are bolted on and can be removed if necessary. Cooling fins are provided on the upper tank and the name "Bethlehem" and a star are prominently displayed on the front of the top tank. Thermo-syphon system of water circulation is employed and the lubrication of the engine is by a gear pump, which maintains a constant level.

#### Transmission Members

Clutches and gearsets are identical in the different models excepting for size. The clutch is of the two-plate dry type, requiring no adjustment or lubrication. Lubrication of the thrust bearing is taken care of by means of the hollow driveshaft. All gears and shafts in the gearset are of chrome-nickel steel, hardened and ground and mounted on ball and roller bearings with the exception of the countershaft on Model D-1, which is mounted on a bronze bearing.

The propeller shafts are made of steel tube, 2½ in. in diameter on the smaller models and 3 in. in diameter on the large model. They are of the floating type, as the propeller shaft floats between conical springs and fits itself in the position best adapted to the truck in which it is used. All propeller shafts are equipped with a Barker propeller shaft steady bearing, which prevents whipping of the shaft by supplying a bearing at the

center of the shaft, this bearing being held in place on slides with springs so that it can move as the axle and frame move in relation to each other, but the springs are of sufficient strength to prevent shaft whipping.

The rear axles are of the internal-gear-drive type and have no welds in their construction. Differential gears and pinions are of chrome-nickel steel, hardened and ground, as are the jackshafts. Both jackshafts and differentials are mounted on adjustable annular bearings.

Two sets of brakes are provided, the service set being external contracting and the emergency set being internal expanding. Both sets operate on the rear wheels direct and both are double acting.

The wheels are of artillery type with 14 spokes front and rear, all wood parts of second-growth hickory and hubbed up under pressure. Any standard make of tires can be furnished, the sizes being as follows: 1½ ton, front 34 x 3½ in., rear 34 x 5 in.; 2½ ton, front 34 x 4 in., rear 34 x 6 in.; 3½ ton, front 34 x 4 in., rear 34 x 5 in. dual.

#### Front Axles

The centers of the front axles are chrome-nickel steel, drop forged in one piece with no welds. The spring seats are forged integral with the axles as are the knuckles. The steering pivots are nickel steel and wheels are mounted on roller bearings, which are adjustable for wear. Hubs are semi-steel and steering yokes as well as knuckle pins are bushed.

The springs are specially adapted to the Hotchkiss form of drive and the main and second leaves are silico-manganese stock. Spring eyes are bushed with phosphor bronze and the clips are nickel steel. The spring shackles are of electric furnace steel and the bolts are nickel steel. Oil cups are provided for lubrication.

#### Frames

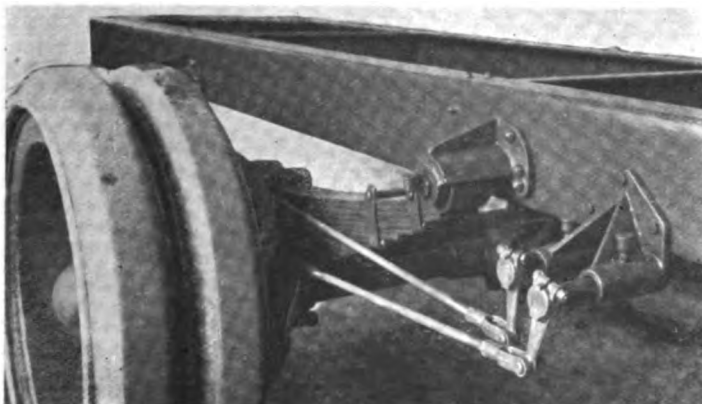
The frames are of cold pressed steel and all cross members and brackets are hot-riveted to the frame.

The comfort of the driver has been well looked after and the seats and backs have Marshall type springs, well tufted upholstery and a contour that insures comfort. The seat is wide enough to accommodate three persons and the doors and cowl give protection in severe weather. The doors can be removed in hot weather.

The steering gear is of the worm and nut type, with ample provision for adjustment. The steering rim is 18 in. and the spark and throttle levers are mounted on top of the wheel. The steering gear is irreversible.

A standard express and stake bodies can be had for the two smaller models, these being finished in black enamel. Cab tops are fitted to and mounted on the chassis and are provided with side and front curtains.

The chassis prices are \$1,765 for the 1½-ton, \$2,165 for the 2½-ton and \$3,265 for the 3½-ton model. These prices are for the chassis with cowl. The cabs are \$60 for any of the models and stake or express bodies for the 1½-ton model are \$110, and for the 2½-ton model \$130.



*Details of the Bethlehem brake connections*

"Yes, I've been dealing with the same garage for 5 years. They always phone me when there is going to be a price raise in tires and ask if they shall lay aside a couple of tires for me." This is real merchandising and it not only sells the goods, but gets the customer's good will. These kind of customers stick to the same dealer year after year and always praise the service they get to the other fellows. Are you doing any such service to your customers or are you just sliding along?

# SCIENTIFIC CONSTRUCTION

GARAGE

SHOWROOMS

REPAIRSHOPS

We shall be glad to draw a plan for you or give you any other aid in your building, free of charge. But be sure to send full details, including a sketch of the plot, showing position of streets

## Wants Complete Plant

Editor Motor World: We wish to build a garage 50 x 140 in this city, and would like to get in touch with some one who would submit plans and specifications and prices (approximately) on such a building. You could probably give us such information as we desire, namely, a good plan for a garage to have:

A wash room, stock room, office, display room, wood workers' room, welding and blacksmith's room, repair room, furnace room and oil and grease room.

We wish to have room for three cars in the display room. We think that we should have a basement and two floors above it, the basement to include oil and grease, furnace, welding and blacksmith, wash and storage rooms. The first floor to include office, stock, display and storage room. The second floor to contain woodwork and general repair room. —Olson Bros. Auto Co., Superior, Wis.

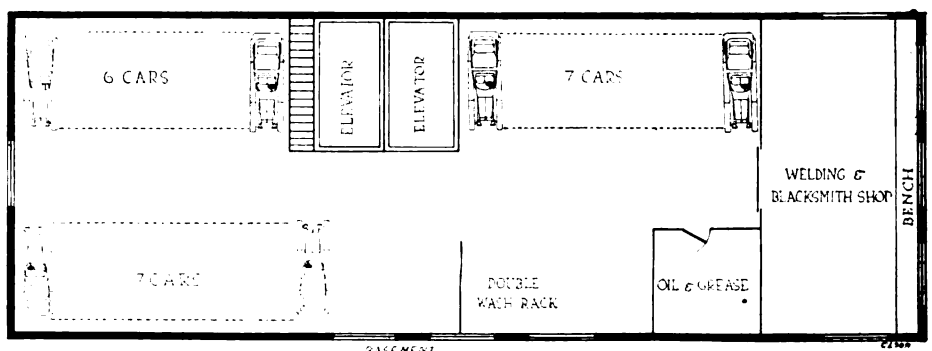
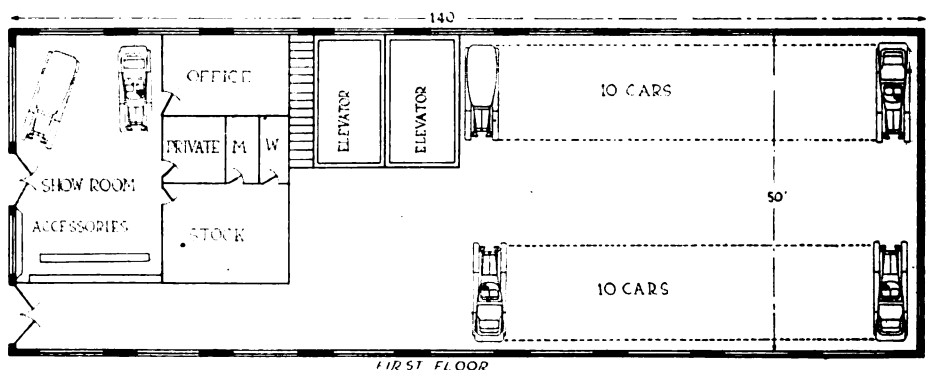
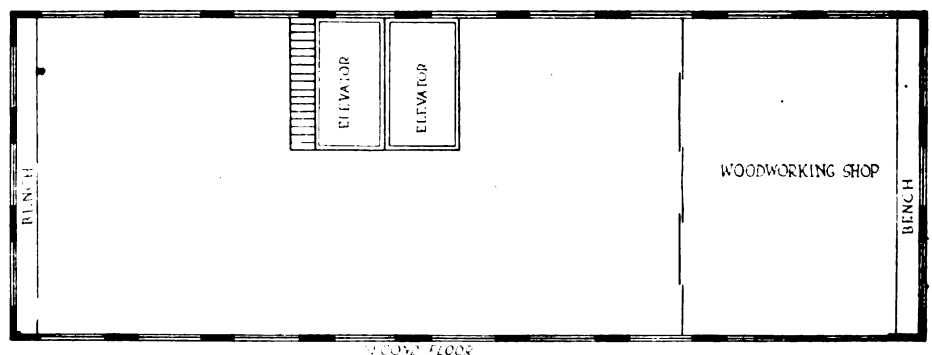
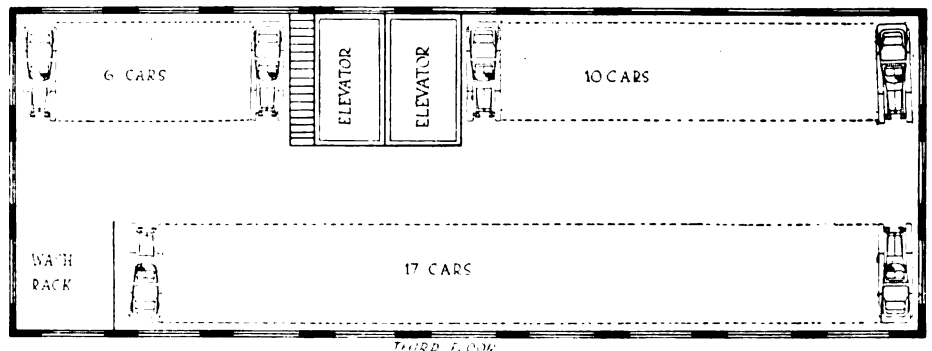
In requesting a plan you neglected to state whether your plot is on a corner or not so we were forced to assume that it was not. At the same time the layout is fairly well suited to a corner location, but we could improve it quite considerably if we knew positively that it was on a corner.

The blacksmith shop is placed in the basement as requested, but as you did not give any hint as to its capacity we were forced to assume a size for it, which may or may not be satisfactory.

Inasmuch as you desire the whole second floor for a shop it is plain that you plan to have this department quite complete. It was impossible to do more than leave this space blank because the disposition of the space depends entirely on how you intend to use it. If you do a lot of battery work you will want a battery charging room; if you are planning to have an elaborate machine tool equipment you will want considerable of the space for this purpose. Without knowing these facts, however, it would be impossible for us to divide the shop space up into rooms or locate the positions of the tools.

The size of the woodworking shop was also a matter of estimate since we had no clue as to the size you desired. For the same reason we could not arrange the tools in it.

We wish you would study this plan carefully, and if you desire any changes or want another plan we shall be glad to draw it for you if you will give us the additional details necessary.



The editor of this department is glad to answer questions. In sending queries, always include copies of contracts, notes, etc., to which you refer.

# THE LAW

By George F. Kaiser

As It Applies to  
Dealers  
Repairmen  
Garagemen

## What Not to Do

The following letter received from a Motor World subscriber is printed as an example to garagemen of what not to do. If this subscriber had called in a person skilled in the matter of contracts before he signed up he would not find himself in his present position. As it is, the only advice I can give in a case like this is to take all your papers to your attorney and put up the best fight you can. You have apparently been "stung," so the only thing to do now is save what you can of the wreckage.

Editor Motor World: Do you know anything about the \_\_\_\_\_ Rubber Co. of \_\_\_\_\_ and the \_\_\_\_\_ tire?

Their salesman called some time ago with a service station proposition coupled with a stock sale and talked so good that I was afraid of the matter and told him so. Then the Boston office sent three other salesmen in a bunch and they offered the same proposal. They would send 18 tires and 18 tubes on consignment, let us do our own adjusting, etc., and we were to take up ten shares of stock, \$50 down and the balance of \$75 in a series of notes. The tires were to be delivered during that week.

I signed and the papers did not fully cover the proposition, so that I did not have much to show. There were witnesses to the statements, but, frankly, I do not know how good their testimony would be. I have written to Boston and to Philadelphia for an explanation but no answers excepting a series of high-sounding form letters. Boston, on the telephone, said that we could not be considered a service station, but have not returned the money as yet.

It looks as if we were stuck, but I surely will not pay the notes unless obliged to do so and will make an effort to have the money returned.

We are enclosing copies of the two letters which have been sent to the company so far and we have nothing to show from them excepting the receipt for the first payment.

The application blank which I signed was marked "Service Station," but that was kept by them.

If you do hear anything concerning this company, I should be glad to hear from you, but I am expecting to see the name of this new concern in the list of "has-beens" if this is a fair sample of their business methods and my present hope is that I do not have too much "stock" in the company when they go.—

Herbert A. Fiske, Fiske Garage, New Bedford, Mass.

### Fiske's First Letter

June 9, 1918.

\_\_\_\_\_, Rubber Co.: Will you please shed a little light on these crooked methods of selling stock so that I will know whether it is the fault of the salesmen—that they were lying on their own initiative or whether it is the instructions from the home office to sell stock no matter what they have to tell the customers to sell it. The stock may be all right and the tires may be all right, but such methods will surely wreck the company some time, and I can only express the wish that I was out of the whole mess.

Some time ago one of your salesmen, Mr. S\_\_\_\_\_, came along with the proposition of making this place a service station for your tires with the proposal that the company would put in 18 assorted tires and 18 tubes, to be paid as sold, adjustments to be left to me, discount 10 and 5 off customers' price, and all the man asked was that I take ten shares on the part-payment plan, tires to be delivered to me within a week along with free rack and signs. The proposition sounded too easy to be true so I told him to call again. Afterwards he did come and repeated his little story. In response to my question, he said that he was not on a commission basis, and the sale did not affect him personally, excepting that he liked to make good on his job.

A few days later another salesman, Mr. K\_\_\_\_\_, came in with two companions and told the same story to Mrs. Fiske and myself with the same assurance that he was not selling on commission, and adding that S\_\_\_\_\_ sent him. Both S\_\_\_\_\_ and K\_\_\_\_\_ said that there was no other service station to be placed in the north end of the city. I found afterwards that they had used the same line of talk to place ten shares in another place close to this one.

Calling Boston on the telephone brought out that they would not establish a service station on a small amount of stock. But why did the two sets of salesmen have the same story unless instructed from headquarters? And now S\_\_\_\_\_ claims to be sore because he lost his commission—after saying there was none for anybody.

I know now that there was not enough in writing and too much said, but I have some witnesses to each conversation, and

I have a few other plans in view and—unless something is done about this very soon—I shall try to prevent anyone else from being swindled.

You have my fifty dollars and I may not be able to get any of that back, and you have my notes for considerable more, but I will try to save others from this same game and also make some move for my own protection.

If everything is clean and above board, I would appreciate some papers stating the exact facts. I am not fussy about seeing another representative with a lot of hot air unless he has the papers to back up his statements. Yours, Herbert A. Fiske.

### Fiske's Second Letter

June 30, 1918.

\_\_\_\_\_, Rubber Co.: To date I have received various nice sounding form letters but no reply to my letter of the 9th, and would suggest that we dispense with the rest of the form letters and get down to business.

In the first place, I have no desire to hold the stock for an investment and never had. I made first payment on false statements made by four of your agents, and made in the hearing of witnesses, and I shall endeavor to find out how I stand in the matter as to my prospects of getting back any or all of the \$50 deposit, and also as to the legality of the notes signed through false statements.

I was to have a stock of 18 tires and tubes delivered at this place to be sold on consignment, and to have them here by the Friday following the visit of your agents. They did not come and the Boston manager spoke as if they would not come. I will wait for a few days to see if you will answer and explain your end of the transaction before I take any other steps.—Yours, Herbert A. Fiske.

### Murder Not Employer's Liability

In a recent New York case it was decided that when a chauffeur who is unloading bricks from a freight car to a motor truck begins a fight with another chauffeur who is engaged in the same work, is hit and killed during the progress of the fight, his case does not come under the workmen's compensation act of New York because it provides that any injury occasioned by willful intention of an employee to bring about the death or injury of himself or another is excluded from the act.

*A Department of*

# BETTER MECHANICS

No. 74 (Continued)

## Shop Adjustment on Reo 2-Ton Truck

### Engine

**MAIN Bearings:** The three crankshaft bearings are adjusted by removing the underpan from the chassis frame and the hand-hole plates from the crankcase.

1—Remove locking wire from heads of locking bolts.

2—Unlock these bolts by turning to the left with the special wrench which is in the tool kit.

3—Slip the wrench down over the threaded spacing sleeve and adjust bearing caps up or down as desired. Fig. 3 shows the construction of the spacing sleeve which replaces the usual liners.

If the engine has been run a short time and requires a slight adjustment, turn the spacing sleeves to the left about one-half turn then lower the wrench to the locking nuts, turn to the right and lock as tight as possible and verify the adjustment by turning the crankshaft.

Do not adjust so that the shaft turns too hard. Adjust each side of the spacing sleeve the same amount on any one bearing or else the bearing will be thrown out of line. To make certain of this important point, mark each sleeve with a

By J. HOWARD PILE

piece of chalk before it is disturbed so that the amount of movement can be seen when the final adjustment is made.

4—Replace the locking wires securely.

**Connecting Rods—Bearings** are adjusted through the hand-hole in the crankcase. In order to detect play in the rods, turn the crankshaft so that the cranks are in a vertical position and then pull back and forth in the direction of the length of the engine rather than to and from you. If there is any play, turn the crank so that the locking clamp can be relieved with a screw driver and the locking bolt loosened with a wrench.

1—Relieve locking clamp.

2—Loosen locking bolt.

3—Remove a liner.

4—Lock bolt as tight as possible. Do not adjust so that the shaft turns hard as a slight amount of play is necessary to take care of expansion. For final adjustment liners not thicker than .002 or .003 in. should be used. These liners should be removed one at a time until the rod shows

absolutely no play, then one of the thin liners should be added to give the desired play. Each time that a liner is removed, the bolt should be tightened and should not be relieved in order to give the desired adjustment. In other words the adjustment should be regulated by the number of liners rather than by decreasing the tension on the bolt.

5—Lock the bolts with the clamps.

6—Close the hand-hole plates.

Provision is made for adjusting the amount of clearance between the valve tappets and the valve stems.

1—Unscrew the lock nut just on top of the tappet.

2—Turn the upper nut to the right to decrease the clearance, to the left to increase the clearance. The proper clearance is .004 in. or about two thicknesses of the paper that this is printed on. This clearance is intended for use on engines that have been run till they are worn in. New engines cannot be adjusted so closely, nor can the clearance be made so small after grinding the valves, as the valves drop down on their seats rapidly under these conditions.

The clutch is of the multiple-disk type

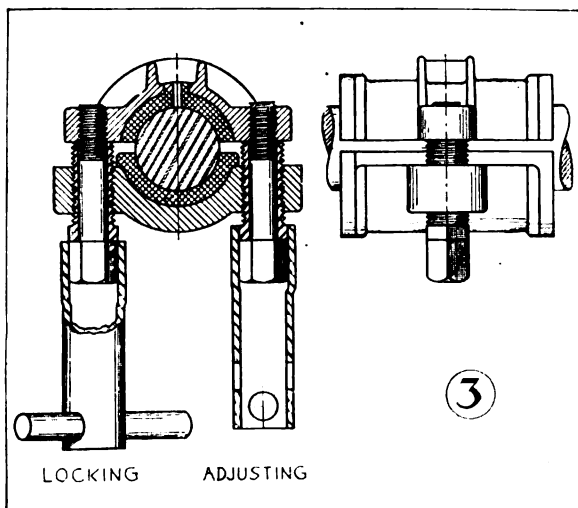


Fig. 3—Adjusting engine main bearings. Slipping wrench on part way unlocks and on all the way adjusts the bearing

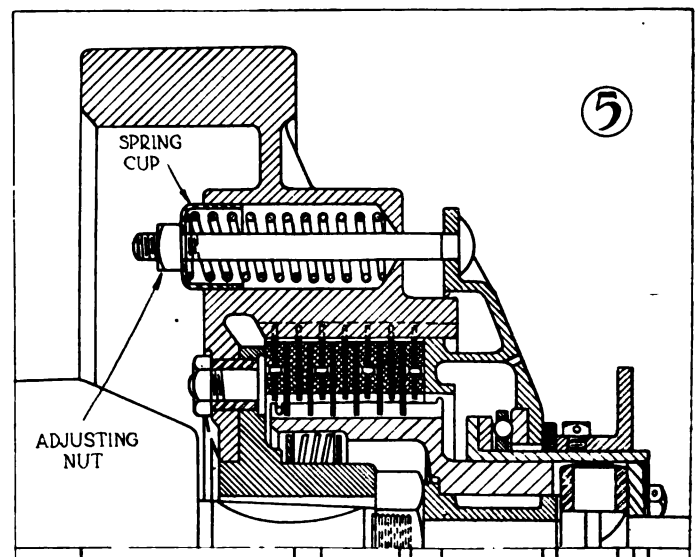


Fig. 5—Clutch adjustments. Adjusting nut adjusts clutch tension, but should not allow spring cup to come out



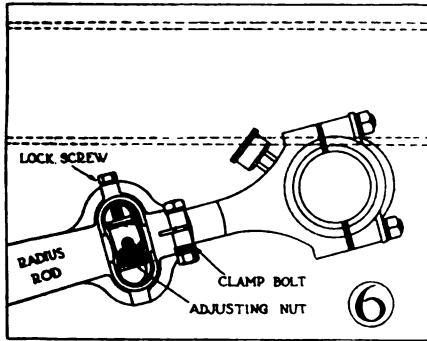


Fig. 6—Adjusting chain tension on radius rods. Fig. 4—Valve tappet adjustment

and requires no lubricant. Slipping is often caused by improper clearance between the clutch opening fingers and the plate on which they strike when in use. This clearance should never be less than 1/16 in. nor more than 1/8 in. when the clutch is in driving position.

The fingers are held in the arms which are clamped in position on the shaft by the clamp bolts and are not keyed to the shaft. This provides means for setting the opening fingers so that they strike the throw-out collar simultaneously which is very important. The clearance of the opening fingers is adjusted by loosening the lock nut on the set screw and on the adjusting stud.

Then screw in to decrease or out to increase the clearance. The clutch-closing springs are contained in recesses in the flywheel and are for the purpose of drawing the plates together tight enough to drive the car. Their pressure should be just enough to keep the clutch from slipping and not enough to make the pedal hard to operate.

More or less pressure may be obtained by screwing the nuts in or out. Never loosen the nuts enough to allow the caps covering the springs to come out of their holes and hook over the edge as this will prevent releasing the clutch.

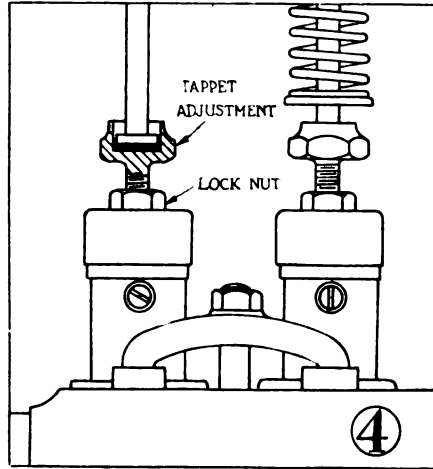
The rivets in the copper facings should be well peined down as they are apt to cause the clutch to chatter when engaged if they extend above the surface of the asbestos. The disks should be kept dry and free from lubricant.

## Gearset

The bearings of the gearset are of the roller type, non-adjustable except in an endwise direction to allow for lining up the gears. The upper front bearing sleeve is held in place by the shoulder screw. The upper rear bearing sleeve is adjustable endwise to take up any lost motion.

A series of six holes equally spaced around its circumference and 1/32 in. apart endwise provides for this adjustment. The shoulder screw should be removed, the bearing sleeve driven forward until the endwise motion is taken out of the main shaft and the sleeve is then turned around till a hole is found to register, when it can be screwed in, locking the sleeve in position.

The lower bearings are mounted in



threaded caps and may be adjusted endwise by unclamping and turning in or out. The gear-shifting rods may be adjusted by turning the shifting arms. In order to turn these arms the gear-shifting lever must first be removed. The lever is held in position by two springs holding down the cap and upper half of the spherical bearings.

## Jackshaft

The two end bearings of the jackshaft are of the roller type, non-adjustable while the two center bearings are provided with means of adjustment readily accessible by removing the cover from the jackshaft housing. By unlocking the clamping bolt, the threaded rings which fix the position of the bearings on the differential gear housing may be turned so as to allow of the shifting endwise of the differential-gearhousing and the attached large bevel gear. By shifting the gear endwise and the driving pinion in and out, the correct alignment of the gears is easily obtained. A slight amount of back lash in the gears is desirable.

## Steering Gear

Two adjustments of the steering gear are possible in the steering gear. The position of the sector endwise is controlled by the threaded adjusting block bearing against the roller guide. Moving the roller in and out forces the sector into or out of mesh with the pinion on the end of the steering shaft. The pinion itself may also be moved up or down by unclamping the lock nut and sliding the whole steering column up or down.

## Brakes

Both sets of brakes have equalizers. The clutch pedal also operates the service brakes on the jackshaft. The emergency brakes operate on the rear wheel drums and are applied either by the brake pedal or by the hand brake lever, or both at the same time. The service brakes are adjusted at the foot pedal. The emergency brakes are adjusted at the pedal and also at the cables. A clearance of 1/16 in. should be maintained between the drums and the bands when the brakes are in released position.

Adjustment of the chain tension is made in the distance rods by unscrewing the locking bolt, unlocking the clamping bolt and turning the adjusting nut. The bolts and distance rods should be kept the same length on the two sides so that the axle will be square with the frame.

## Tap Drill Sizes

Editor Motor World: Can you furnish a table giving the sizes of drill to use when tapping S. A. E. threads and also U. S. Std. threads?—Subscriber.

The following table gives the number of threads per inch and the approximate size of drill to use for the most generally used sizes of both S. A. E. and U. S. Std. threads. The official tables give the exact root diameters of the threads in decimal parts of an inch, and the table herewith gives the diameter the hole should be in the nearest sixty-fourth of an inch. If very exact and tight-fitting work is desired, drills of the exact root diameter of the thread should be used or less than 1/64 in. smaller. This will require careful tapping, and the tap will have to be backed frequently to prevent breakage as the tap will fit very tight. For drilling steel, use lard oil. Cast iron and brass need no lubricant, but the lips of the drill should be backed for brass to prevent catching.—Editor.

Table of Tap-Drill Sizes

Screw Diam.	S. A. E.		U. S. Std.	
	Thds. per In.	Tap Drill	Thds. per In.	Tap Drill
1/4	28	7/32 *	20	3/16
3/16	24	1/4	18	1/4
1/8	24	3/16	16	3/16
7/16	20	1/2	14	7/16
1/2	20	5/8	13	13/16
5/8	18	3/4	12	13/16
3/4	18	7/8	11	13/16
7/8	16	1 1/8	11	1 1/8
1	16	1 1/4	10	1 1/4
1 1/8	14	1 3/4	9	1 3/4
1 1/2	14	2 1/8	8	2 1/8
1 3/4	12	2 3/4	7	2 3/4
2	12	3 1/4	7	3 1/4
2 1/4	12	3 3/4	6	3 3/4
2 3/4	12	4 1/4	6	4 1/4

\*No. 5 drill gage.

## Concentrate Trade on Trucks

ST. LOUIS, July 15—Harry Newman, Inc., recently Kissel distributor in this territory, has announced that until after the war he will confine his distribution to motor trucks, trailers and other undoubtedly essential articles. He says that he is doing this in keeping with the spirit of the War Department's request.

"I am not one of those who considers the passenger car a non-essential," said Newman, "but the question of labor enters. Possibilities for employing suitable help have been carefully considered. I concluded that we could not get enough help to handle the proposition I had in mind, hence I decided to devote our full time to trucks and trailers. We have a good many Kissel cars running and will continue to care for them and hope to resume selling them as soon as it appears possible to put the energy behind the selling that we should."

# Repairshop Shortcuts

*From Motor World Mechanics*

## No. 1446—IN AND OUT BOARD

A glance will show whether any member of an organization is in or out if the in-and-out board shown be used. This board comprises several rectangular wooden slides each bearing the name of a member of the organization. Each person on entering the building slides his name to the "in," and on leaving places it on the outside. A convenient place for this board is near the desk where incoming telephone calls are received.—S. T. W.

## No. 1447—REPAIR GUM AND FABRIC RACK

A repair gum and fabric rack is made in the form of a wooden frame which revolves on a stand fastened to the bench. Holes are bored through the sides of the frame to hold the ends of the wooden sticks on which the rolls of gum and fabric are held. The support is made of ½ in. pipe, a floor flange being screwed to the bottom of the frame and the upper end of the pipe screwed into it. The lower end of the pipe is unthreaded and the floor flange is bored out so that the pipe slips into it. The hole is continued an inch or two into the bench top to give good support.—Goodyear School of Tire Repairing, Akron, Ohio.

## No. 1448—COMPRESSED AIR FOR POLISH ATOMIZER

An atomizer used for spraying body polish is connected to a power air pump instead of being operated with the plunger. The plunger is removed and an old tube nipple is soldered on. The quick-acting type of connector is the most satisfactory, as the air tube may then be slipped on and off instead of starting and stopping the pump.—J. F. Cavanaugh, Connecticut Telephone & Electric Co., Meriden, Conn.

## No. 1449—BATTERY ACID CARBOY ROCKER

Battery acid comes commonly in a square carboy, and the transfer of the acid to a small container is not easy. By the use of a three-sided box, clamped onto the carboy, and provided with rocker extensions, the carboy may be easily tipped and the acid poured out.—S. T. W.

## No. 1450—FORMING AN EYE ON A COILED SPRING

An eye is formed on the end of a closed coil spring by opening the end coil with a cold chisel and bending it back at right angles with a pair of pliers. The

single coil is then gripped in a vise and the spring forced over with a flat end drift and a hammer until it assumes a position central with the eye.—J. F. Cavanaugh, Connecticut Telephone & Electric Co., Meriden, Conn.

## No. 1451—COTTER-PIN HOLDER

A cotter-pin holder to keep cotter pins in an accessible place over the bench is made by hanging a horse-shoe magnet over the bench on a string or wire. A bunch of cotter pins brought near the magnet will adhere till they are needed, and they will lie in such a posi-

tion that the different sizes can be easily seen and picked off.—M. L. South, Day County Garage Co., Webster, S. D.

## No. 1452—EMERY STICKS FOR TIRE REPAIRING

Emery sticks of various shapes for tire work are made by shaping sticks as desired, dipping them in hot glue and then pressing them into emery powder spread on a board. They are then dried for a few hours or preferably over night in a warm place. When the emery is worn out, the sticks can be recoated by soaking them in water, removing the old emery and glue and applying a fresh coat.—J. F. Cavanaugh, Connecticut Telephone & Electric Co., Meriden, Conn.

## No. 1453—PARTS CLEANING PAN

Many parts may be washed with the same cleaning solution by the use of a parts cleaning pan having a perforated false bottom about one-third down from the top. Such a pan may be formed from an ordinary washtub, the false bottom being ½ in. sheet steel cut to fit the sides and set in place on angle clips. The liquid-kerosene, preferably, is drawn from the base and forced onto the parts by a grease or oil gun. The liquid, with the grease in solution, drains off quickly, leaving the clean parts behind, and the grease settles to the bottom. Small parts may also be readily cleaned.—S. T. W.

## No. 1454—EMERGENCY CUP LEATHERS FOR PUMPS

Cup packings for air pumps may be made in an emergency by boring a hole in a block of hardwood the exact diameter of the pump cylinder and as deep as the packing is to be. Subtract twice the thickness of the pump leather from the hole diameter and turn up a hardwood plug, rounding the corners slightly. The leather is soaked in water for an hour and then pressed into the wood mold with the plug, using a vise. It is left in that position till dry and the packing is then trimmed.—J. F. Cavanaugh, Connecticut Telephone & Electric Co., Meriden, Conn.

## DETECTING PUNCTURES IN TUBES

Punctures in tubes are more easily detected if the water in the testing tank is slightly colored with washing blue or shavings from an indelible pencil. The bubbles coming from the puncture are white and show up clearly in the bluish water.—W. J. Skow, Skow Auto Tire Repair Co., Beatrice, Neb.

## Make a Dollar

*HOW often have you been compelled to rack your brain to overcome some difficulty? But when you did find a solution—what a satisfaction it was! Well, here's a chance for you to dig some of those life-savers out of their hiding places and put them to work for your fellow-craftsmen. Send them to Motor World. We will pay you a dollar for every one accepted for publication.*

*The only requirements are these:*

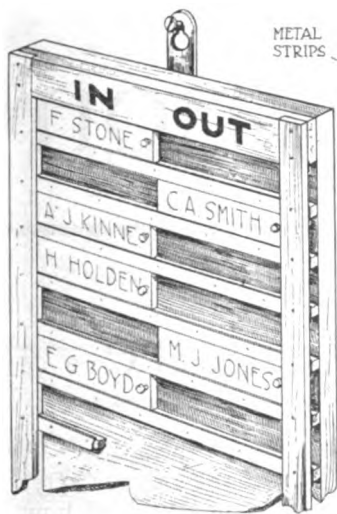
*1—Describe the shortcut briefly but clearly, in few words.*

*2—Send a sketch, in pencil or pen, no matter how rough; our artists will finish the job.*

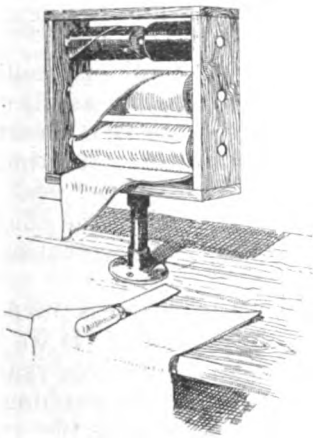
*3—Write on ONE side of the paper only.*

*4—Sign your name and initials, the name of the company you are with, and the town.*

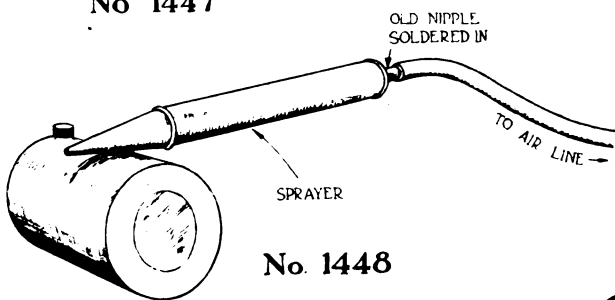
*Write plainly. If your name is unusual, print it in capital letters.*



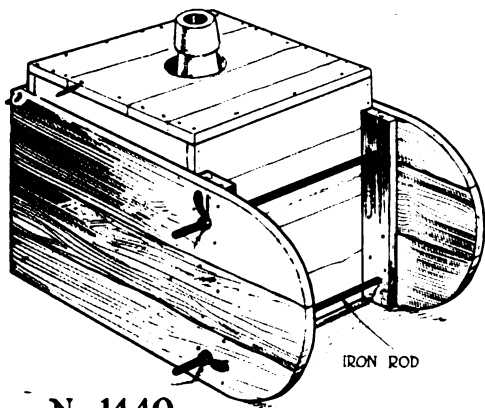
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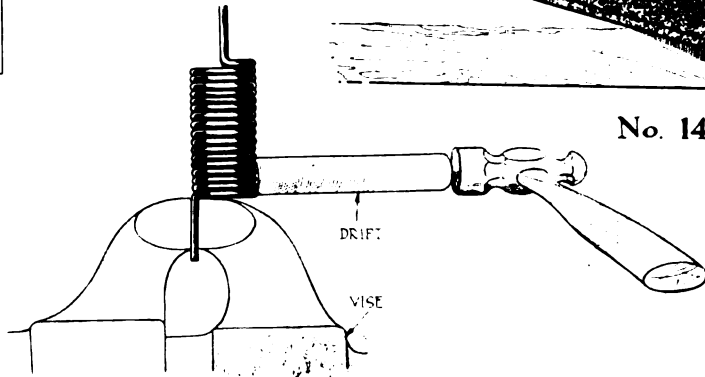
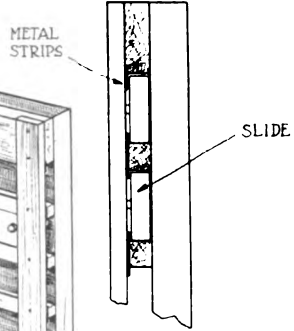
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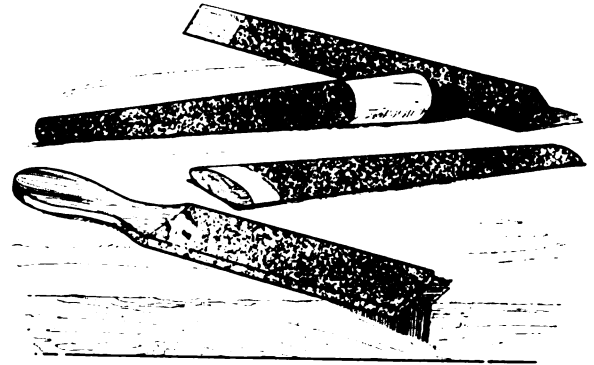
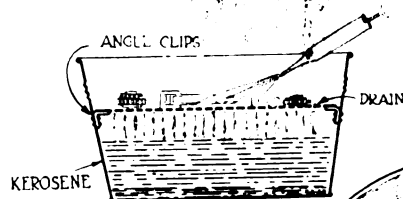
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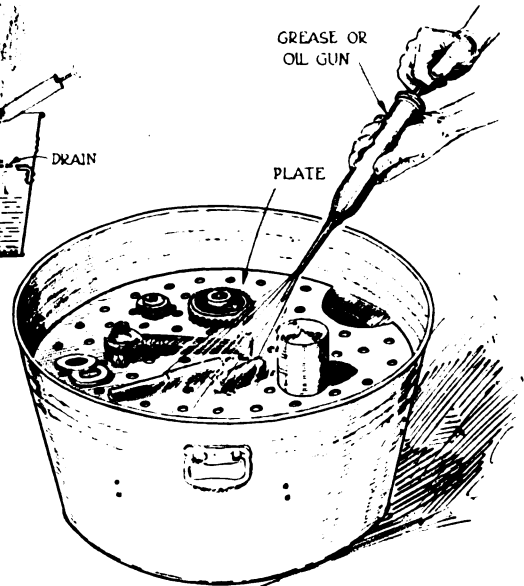
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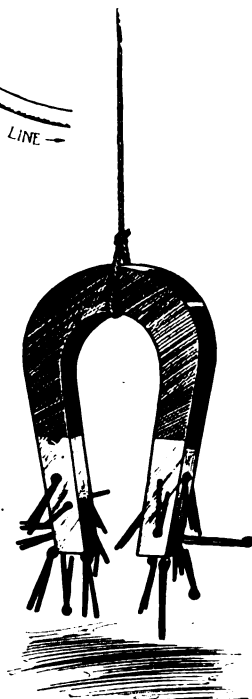
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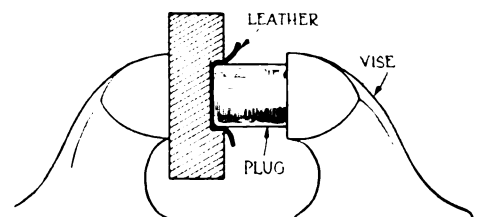
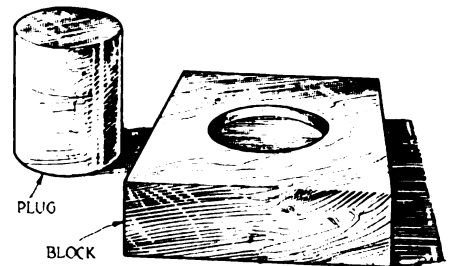
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No. 1453



No. 1451



No. 1454

# Editorial Observation

## Say "Recreation," Not "Pleasure"

**E**VENTUALLY the trade may get somewhere on this "pleasure car" question. Quite a few people who ought to know better are still saying "pleasure car" when they mean "passenger car." It will take time, of course, but the longer it takes US to get over it the longer it will take the public to accept the more suitable nomenclature.

There are times, however, when we wish to refer to the use of a car in other than business pursuits, and then we all light on that old term "pleasure." Aside from the fact that some cars never did give much pleasure to anybody except the factory stockholders, there is no good reason why the term "pleasure car" or "car used for pleasure purposes" should be permitted to remain in our trade vocabulary.

There are two reasons why the term should be dropped. One is that it doesn't express what we intend to convey. The other is that it builds up an enormous misconception in the public mind, and this little old public mind is a powerful factor in the success of our industry.

We should say "recreation," not "pleasure." When we refer to the evening ride of the farmer after his hard day's work we are endeavoring to tell how the ride is recreation to him. It RE-CREATES him, it makes him over, it transforms him into a new man, it makes him better fitted to dig into the next day's work with a maximum of results.

Does he get "pleasure" out of it? Of course he does, but he gets pleasure only so far as all recreation is pleasure. Snuffing cocaine is a pleasure to some people, but it is not recreation. It is harmful.

Recreation may not always be 100 per cent pleasure, but it is always beneficial. When the office man hoes his garden in the evening it is recreation—but it isn't all pleasure.

What we mean by other-than-business purposes is "recreation," so let's say "recreation." If we hadn't coined the term "pleasure car" ourselves years ago we might not to-day be classed with perfumes and toilet water and other purely pleasurable articles. Let's lift ourselves out of a bad class.

## Keen Eyes and Close Figuring

**N**OW and then in the trade are found examples of how a dealer can make a profit despite the unusual conditions that the present days have thrown upon us and be ready for any new conditions.

There is one dealer who is getting only about 60 per cent of the cars he should get. He is a car dealer, he has no truck agency, he has not as yet added any of the whole line of automotive products, his sales are off, yet he is getting by in good shape.

He has carefully looked over his dealer organization and ascertained which of them can best get along with few or no cars. He then distributes his cars to those dealers who need them most, retaining for his own big city retail trade just enough to assure himself a reasonable business.

He revamped his service station entirely, changed his methods and is making the station pay a profit in-

stead of creating a loss which must be made up by new car sales.

He put all his salesmen on commission. They all get 5 per cent on both new and used cars. He has fewer salesmen, and most of them are above the military service age.

He expects to get a medium-priced car to supplement his comparatively high-priced car, and also is seeking—and expects to get—a car at considerably under \$1,200 to round out the line and give him a car for nearly every purse.

He has his eyes open for a truck and a tractor, but meantime he is making a profit and is trimmed in fine shape to meet any adverse wind that may rise.

Ever since conditions began to change this man has been studying his business with a close eye to possible changes. And every day he uses his pencil to figure out where he stands. He is an example of the

dealer who will get by unless something more drastic than we can now foresee happens.

Another successful distributor has figured out that he can get by best by closing his retail store if necessary and holding his dealer organization together—if such a decrease in car output becomes necessary.

Another automotive house is making a thorough and immediate investigation of tractor factories to hook up now with the one which gives best promise of development when the war work becomes less pressing.

The more alert dealers everywhere are on their toes. They are ready to shift to safety at an instant's notice. They are all right yet and are going along quite smoothly, but are all set for bad turns or holes in the road, because they know there is safe going if they only act the part of competent steersmen during the coming months.



## Letters from Readers

*THIS page is for the use of MOTOR WORLD readers with something to say. Letters on subjects of interest to dealers, garagemen, repairmen and jobbers are always welcome.—EDITOR.*

### A Lens Prediction

Editor Motor World: No one can deny that if headlight laws were enforced more lenses would be sold. At present the laws governing the use of automobile headlights are not being generally enforced and none of the substitutes, such as moral suasion, "be a gentleman" and other golden rule propositions seem to have had very much effect on increasing the sale of headlight lenses. It all gets back to the original question of "What can we do to have the law enforced?"

No one seems to have had any great interest in *why* the law is not being enforced, or to consider the importance of this question in its bearing on the law's enforcement. The almost universal failure of the traffic authorities to enforce headlight laws must have some good and sufficient reason other than the disinclination on the part of officers to make more work for their department. The police and other traffic officials wish to improve traffic conditions, and will see to it that laws are enforced when their enforcement will improve the conditions they are drawn to regulate.

The trouble with most headlight laws is that they cannot be definitely interpreted. For example, the Wisconsin state law says that automobiles must be provided with lamps of "reasonable brightness." How can such a law be enforced when there is no standard of "reasonable brightness?"

Other laws state that headlights must not blind or dazzle or state that they must not glare. There is at present no official standard for glare, dazzle or blinding, and so long as an officer knows that he has small chance of making an arrest stick, he will not show much enthusiasm about making arrests.

In some of the states where there has been recent legislation an effort has been made not only to specify that the light from headlights shall not glare, but to specify the brightness and distribution of the light on the road. A law of this kind has a good chance of being enforced, as it not only safeguards the driver and also the passer from glare, but insists that both have enough light and a proper distribution of light to make night driving safe for all users of the road.

Such a law as the above needs some standard which fixes the maximum and minimum amount of light allowable at

certain points on the road and above the road. With these standards an officer can easily school himself in judging light so that he can tell with surprising accuracy how near a given illumination comes to the standard.

The secretary of state of New York, working with committees from the Society of Illuminating Engineers and the Society of Automotive Engineers, and after advising with many of the manufacturers of lenses, has formulated a standard which will be used in interpreting and enforcing the New York state law.

After making extensive tests, both in the laboratory and on the road, the committee has found that to light the road to a distance of even 200 ft., and at the same time keep the glare down to a point where it would not be absolutely dangerous, although it might be disagreeable, it was necessary that the light sent out from the headlight be much stronger below the average eye level than it is above that level. In other words, the eye can stand only a fraction of the light which is required to illuminate the road for safe driving at speeds which are allowable in the day time.

This fixing of a standard and testing of devices will determine which of them can make a headlight comply with the law. If the tests are properly conducted—and they undoubtedly will be—they will throw out a large number of devices such as ground glass or its equivalent, which, because they distribute the light symmetrically above and below the level of the headlights, cannot fulfill either the letter or intent of the law. This will cut down the work of the authorities, as it will limit their efforts to the question of whether the devices which are accepted are being properly used and they will have standards to refer to in case their judgment on this point is questioned.

There is great danger that, when the manufacturers and jobbers of the types of lenses which will be prohibited by the present interpretation of the law find out what is happening to them, they will try to have standards and interpretation modified and made more general so as to permit the use of practically any device that is on the market at the present time. This is about what happened when the New York state law first went into effect a year ago, and it resulted in the complete failure of the law so far as making the roads safer at night or build-

ing up a steady sale for lenses was concerned.

It is impossible to enforce any law for more than a very short time unless the comfort and safety of the people affected by the law will be added to by its enforcement. Since a standard for a comfortable and safe light has been determined by a competent and impartial body of men, any action which lowers standards and tends to confuse the interpretation of the law must be against the interest of the majority of those affected by the law.

The automobile headlight committee of the Society of Illuminating Engineers sums up its investigation of the automobile headlight problem in the following description of what may be termed ideal lighting so far as seeing and safety are concerned.

The brightness of the roadway should be a maximum over an oblong area centering, as seen by the driver, about 100 ft. ahead and as nearly the full width of the roadway as possible from 50 to 100 ft. ahead of the car. From this area of extreme brightness, the brightness of the roadway should shade off gradually to the side and in the extreme distance.

From the point of view of the person approaching, the ideal headlighting is that which produces no blinding glare in passing. This condition requires that the road illuminating beam does not shine in the passer's eyes at any point and the total light entering his eyes from any given direction shall not be more than equal to the light from a source, say, 100 candle power for more than half a second.

The conditions of ideal lighting for the driver and the person approaching a pair of headlights are opposed in many respects. The headlighting problem therefore is essentially that of securing the compromise of interests most advantageous to both driver and passer.

Tests to establish standards for road illumination have resulted in the following values being suggested:

At a distance of 200 ft. directly in front of the car and at some point between the road surface and a point 42 in. above this surface the light shall not be less than 1200 apparent candle power.

At a distance of 100 ft. ahead of the car and at a height of 60 in. or more above the level road surface the light shall not exceed 500 apparent candle power.

It can readily be seen that to meet the conditions specified above and safeguard both driver and passer, the light below the average eye level must be as strong as it is practical to get it, while above the eye level the light must be kept down to a small fraction of the light below the eye level.

No other distribution of light can either satisfy or safeguard both driver and passer, and no law permitting any other distribution can be permanently and extensively enforced. Any attempt to enforce laws which are not based on the above practical requirements can only be a hindrance to the sale and use of lenses and will be of no lasting value

to either the driver, the passer, the dealer or the manufacturer.

From the manufacturer's and jobber's point of view the permanent re-establishment of the lens business on a profitable and serviceable basis demands that devices which do not comply with the standard suggested by the Society of Illuminating Engineers be sold as dimmers only, and that as fast as practical they be dropped from the market in favor of devices which do comply with the standards mentioned above. Trying to force all classes of devices on the general public regardless of the merit of the device can only result in killing the interest of the general public and stopping their buying of all lenses.

#### Market Possibilities Overestimated

Summing the whole matter up, the present deplorable condition of the lens market is due, first, to an over-estimating of the possibilities of the market. This brought up a flood of devices of all kinds, some good and some indifferent and some bad, nearly all of them heavily advertised, and nearly all of them making the most extravagant claims as to what they would accomplish. The public soon found out that the majority of the devices which were being forced on their attention would not add very much to either their comfort or safety, nor would they add much to the comfort and safety of the people they met.

As the sale of lenses did not seem to hold up as it should there was a rush to have headlight laws passed, and in most cases the law was passed without any regard to whether they had a chance of accomplishing any improvement of conditions or not. The passing of a headlight law usually resulted in a rush of business for about a week, and in most cases from 10 to 15 per cent of the driving public equipped their cars with lenses. As they were disappointed in the result they obtained, they naturally told their friends that the lenses they were using were not a success, and in this way the whole list of lenses got a black eye regardless of whether they deserved it or not. This is the situation at the present time.

The remedy is to show people where they should have illumination on the road, and to see to it that the laws now in existence are changed actually to compel a more comfortable and safer distribution of the light on the road. The laws must be enforced strictly on their merit and without regard to stocks which are on hand at the present time. If this is done, a legitimate, prosperous and permanent business can be built up in headlight lenses in a short time.—F. H. Ford, C. A. Shaler Co., Waupun, Wis.

#### Wants Association

Editor Motor World: I receive and read with interest Motor World weekly.

We are desirous of forming in this city and territory a dealers' association, and would like some general information as to organization, etc., and in case you would be unable to furnish this informa-

### Keep Busy

Keep busy!

That's the power behind every success.

Let's make more calls a day. Let's write more sales a day. Let's put more honest effort into every call and every sale.

Then we'll sell in one day what we used to sell in two.

That is thrift.

Thrift of time—the salesman's thrift.

Time is all valuable, the most precious thing we have. We have abundant time, but only if we conserve it. Spend it carefully. Make each hour, each minute count. Make it count for ourselves, for our employers, for our Country.

If we conserve time, we shall be helping ourselves and our families; we shall be helping business; we shall be helping to win the war and preserve Humanity.

So work! And keep on working. Work moves mountains. Work makes the impossible possible.

Work with your customers. This is team work. Help them breathe your spirit of work into their organizations. Help them make their workers time-thrifty. Show them by example the benefits of constructive, not destructive work.

Therefore don't knock anybody. And don't let others knock. Don't criticize till you have a tried-out remedy. A knocker is a time spendthrift. He squanders the time of himself and his listener.

Knocking has no part in a salesman's creed.

Boost!

Scatter optimism broadcast. You can't squander it.

Be Time-thrifty for your employer, for business and your country, and you can't help being thrifty for yourself.

Then you will lift yourself by your own bootstraps; you will lengthen your height and vision to reach whatever you work to get.

To be thrifty you must be creative. To be creative you must work—to do in one hour the work that we formerly did in two.—William H. Rankin.

tion, feel you could forward this letter to some one who is in a position to do so.

We have already in this city "The Quebec Automobile Association," the membership of which is made up of owners. We would like information on the following points:

Is it good practice to form a dealers' association as a branch of an automobile association, or should it be separate?

Regarding tire sales, do the dealers agree to sell tires at the lists furnished by the manufacturers. What guarantee does the dealers have, for instance, that some dealer holds the price on tires but gives a tube free or 5 gal. oil. In other words, cut the prices.

In tire sales, do owners of five or more cars get the dealer's price?

What are the benefits to be derived from a dealers' association?

Supposing all the dealers, with the exception of two or three, are willing to form an association, what action would you suggest taking?—The Canadian Fairbanks-Morse Co., Quebec.

We wish you all sorts of success with the formation of your Quebec association, and shall endeavor to give you all the assistance we can in its formation.

As to whether it is a good idea to form a dealers' association as a branch of an automobile association, we can only say that it is generally not done, and that it depends a great deal upon local conditions. Generally speaking, we should advise you to form your association separately.

#### How To Maintain Prices

As to tire sales, and also to the prices on other goods, you cannot expect too much from an agreement between members to maintain prices. We should advise you not to go too strongly on this point. Prices can be maintained under present laws only through the co-operation and good will of the members of an association, and this co-operation and good will cannot be acquired until the association has been in operation for a little while, and the members have been thrown together and made to know one another better. Eliminating price-cutting is largely an educational matter.

As to whether owners of five cars or more get the dealer's price, we can only say that in some cases they do, but there seems to be a tendency in the trade to get away from giving dealers' prices to anyone except dealers.

#### Form the Association Now

If all the dealers with the exception of two or three were willing to form an association, we should advise you to go ahead and form it, with the expectation that later on you would be able to get these others in.

As to the benefits to be derived from an association, we suggest that you write down all the undesirable conditions that now exist, and set down as benefits of the association the elimination of these conditions, because that just about sums up the situation. We have in the past printed stories on association benefits in Motor World, but believe you will find your benefits largely local.—EDITOR.

#### England Unifies Transportation

LONDON, ENGLAND, June 4—England is wrestling with the problem of unifying as well as effecting national control of all forms of transportation. At a recent meeting of the Transport Workers Federation, it was proposed that a National Board of Communications be formed, the constitution of which would be equal representation of employees and the state. This board will take over and administer all inland passenger, mail and merchandise transportation. It would embrace transportation by highway, railroad, water and air.

# The RETAIL NEWS

## EAST

**Frank McAllister**, New York, who has branches in Newark, N. J., and Binghamton, N. Y., will distribute J. & D. tires for the New York metropolitan section, and a part of New York and New Jersey.

## New Truck Dealers

**Frank E. Wing** (Hurlburt).....Boston  
**Joseph S. Donovan** (Sanford).....Boston  
**Mitchell-Lucas Co.** (Templar).....Boston  
**Middlesex Motors Co.** (Corliss).....Boston  
**The Syska Co.** (Koehler).....Brooklyn  
**La France Garage** (Koehler).....Elmira, N. Y.  
**Dallos Motor Co.** (Koehler).....Dallos, Pa.  
**Charles J. Kirshman** (Koehler).....Hazleton, Pa.

## New Garage

**James Sykes**.....1316 Olive St., Philadelphia

## MIDDLE WEST

**C. C. Davis**, Bloomington, Ill., has opened a tractor agency at 217 East Front Street and will distribute Cleveland tractors in the central Illinois territory.

**C. S. Foster** and **J. E. Rattan**, Lincoln, Ill., have opened an accessory shop at 316 East Pulaski Street.

**Maurice W. Fox**, Detroit, has been appointed distributor for Heath-Duplex bodies for southern Michigan.

**The Bearings Service Co.**, Detroit, has established a service department for rims in each of the 22 service branches of the company.

**The United Motors Service, Inc.**, Detroit, has established a branch agency in Cleveland, having leased 15,000 sq. ft. in the 2-story building being erected on East Sixty-first Street, north of Euclid Avenue.

**The International Sales & Garage Co.**, Detroit, which was recently incorporated, has leased the building formerly occupied by the Simons Sales Co., at 1110 South Washington Avenue, and will handle the International truck, besides conducting a general garage business. Officers of the company are: President, **Frank J. Worden**; vice-president, **George W. Gross**; secretary and treasurer, **C. F. Papham**.

**Frank P. Gamelin Co.**, Detroit, has opened new salesrooms at 998 Woodward Avenue. The company was formerly located at 751 Cass Avenue, where Monroe and Briscoe cars were handled, but the addition of the Olympian and King lines necessitated larger quarters.

**H. T. Hansen**, Escanaba, Mich., has taken the district agency for the Simplex Ford starter.

**The Ford Sales Co.**, Flint, has discontinued its salesroom and parts department at 127 East Kearsley Street, and has moved them to the service station at 2510 North Saginaw Street. The company consolidated the two places of business owing to the decrease in production of Ford cars.

**The Indian River Garage**, Sheboygan, Mich., has been taken over by **Hopke & Corwin**. It was formerly managed by **Cleve Hamper**.

**The National Automobilists' Protective Corp.**, Cleveland, has been incorporated for \$10,000 to deal in accessories and supplies, and render general automobile service.

**The Overland Green Bay Co.**, Green Bay, Wis., distributor of the Overland Wisconsin Co., Milwaukee, has taken over the business and territory formerly handled by the Overland Wausau Co., Wausau, Wis. **L. P. Kilbourne**, manager of the Overland Madison Co., Madison, Wis., has been promoted to the position of manager of the combined territory at Green Bay, Wis. **K. O. Kellogg**, who has been manager at Wausau, has been transferred to Madison to take Mr. Kilbourne's place.

**Charles Dickelman**, Kewaunee, Wis., operating a garage and repairshop, has been appointed distributor of the Cleveland tractor in Kewaunee County.

**Hugo Messer** has purchased the Federal Tire & Supply Co., 345 Eleventh Avenue, Milwaukee, and will continue the business with his nephew, **George Messer**.

**The Field Auto Co.**, Rice Lake, Wis., has announced that **Maurice Field**, son of **T. H. Field**, proprietor, has become a partner in the business and will assume a share of the active management, having charge of the machine and repairshop. The Field company deals in the Overland and Dodge, the All-Work tractor and the Republic truck.

**The Badger Garage**, Stevens Point, Wis., has been purchased from **Joseph Koehn** by **Louis Jacobs** and **Frank Elden**. Mr. Koehn has enlisted in the aviation section of the United States Navy as a mechanic.

## New Garages

**John Miller**.....Bloomington, Ill.  
**C. C. Davis**.....Bloomington, Ill.  
**J. M. Brownback**.....Decatur, Ill.  
**Foster & Rattan**.....Lincoln, Ill.  
**W. R. Griffen**.....Pekin, Ill.  
**D. H. Smith**.....Peoria, Ill.  
**R. S. Alverson**.....Adrian, Mich.  
**Robinson Brothers**.....Cadillac, Mich.  
**American Garage Co.**.....Monroe, Mich.  
**Morrison East 105th Street Garage**.....Cleveland  
**Kreutzer & Esselman**.....Athens, Wis.  
**Claude E. Sherman**.....Augusta, Wis.  
**Leo Klobucnik**.....Kenosha, Wis.  
**Fred L. Powers**.....Prairie du Sac, Wis.

## New Truck Dealer

**Buick Service Station** (Republic). Ann Arbor

## NORTHWEST

**Carl Sutton**, Jefferson, Iowa, Oakland dealer, has gone into the army and the Oakland agency has been taken by **Smith & McCuen**.

**A. J. Hicks** has purchased the City Garage, Rockwell City, Iowa, from **A. W. Baughman**.

**H. L. Meier**, Sac City, Iowa, has sold his garage to **S. A. Shonkwiler**.

**The E. E. Mockett Auto Co.**, Lincoln, Neb., has leased a new 2-story building.

**C. H. McGrew**, Northport, Neb., has taken over the garage of **J. B. Howard**.

**Jens Torring**, Ruskin, Neb., has bought the garage of the Superior Motor Co.

**Miller & Greeley**, Holbrook, Neb., have bought the garage of **T. G. Reid**.

**T. Miller**, Marsland, Neb., has bought a half interest in the Keeler-Coursey Garage, Alliance, Neb.

**R. H. Keaton**, Polk, Neb., has bought the garage of **F. J. Hahns**, and will add a repairshop.

**N. E. Leonard**, Pawnee City, Neb., has bought the Day & Night Garage of **Ben R. Henry**.

**Fuller & Tompkins**, Thayer, Neb., have bought the Thayer garage.

## New Garages

**J. E. McDonnell**.....Chariton, Iowa  
**Weeks Lewis Auto Co.**.....Grundy Center, Iowa  
**Longaker & Noah**.....Knoxville, Iowa  
**Diggins & Orr**.....Melbourne, Iowa  
**E. A. Lester**.....Perry, Iowa  
**Black Brothers**.....Webster City, Iowa  
**Holt-Kelso Auto Co.** (addition).....Beatrice, Neb.  
**I. H. Kline**.....Beatrice, Neb.  
**Krug Automobile Co.**.....Beatrice, Neb.  
**Purdy & Courtney**.....Beatrice, Neb.

## New Truck Dealers

**Ferry Truck & Tractor Co.** (Dart).....  
 Sioux City  
**Victor Motor Co.** (Dart).....Omaha

## PACIFIC COAST

**R. W. Howard**, Alameda, Cal., operating as the Alameda Cyclery and Vulcanizing Works, 2416 Central Avenue, has installed a vulcanizing plant and added a complete line of accessories.

**E. C. Dick**, Alameda, Cal., has been appointed a Ford dealer. His salesrooms and service station are located at 2424 Central Avenue.

**J. L. Lally**, Alameda, Cal., has become sole owner of the Sunset Garage.

**The Oakland Auto Wrecking Co.**, Oakland, Cal., has leased quarters at 1715 Broadway.

**The Eldorado Garage**, Colma, Cal., has opened under new management.

**The Rome Vulcanizing Co.**, 3215 Mission Street, San Francisco, has secured the Ajax Tire Agency.

**Mires and Brouillet**, San Francisco, have opened a used car salesroom at Twentieth and Valencia Streets.

**A. E. West**, San Francisco, has become sole owner of the Hawkins & West Tire Shop, 2330 Market Street.

**H. D. Allen**, Hayward, Cal., has opened an automobile repair shop, specializing on Ford work, at 1040 B Street.

**John Leppia & Son**, Hayward, Cal., Hudson and Dodge dealers have moved to larger quarters at 828 B Street.

**J. B. Malmstrom**, Oakland, Cal., has dissolved partnership with **J. E. Skaggs** and become sole owner of the Frazier Garage, 3241 Foothill Boulevard.

**S. Brask & Co.**, 2325 E. 14th Street, Oakland, Cal., has opened a garage and supply store.

**The New Way Second-Hand Auto Co.**, Oakland, Cal., has opened salesrooms at 2829 Broadway.

**W. J. Benson Co.**, Oakland, Cal., has opened Stephens salesrooms at 2835 Broadway with **Maxwell P. Brasch** as manager.

**The Electric Vehicle Exchange**, Broadway and 30th Street, Oakland, Cal., will handle the Rauch & Lang Electric and operate an exclusive electric service station.

**Johnson & Sund**, Dodge dealer at Palo Alto, Cal., has erected a new building 50 x 124 at 529 Alma Street.

**The University Garage**, Palo Alto, Cal., has secured the agency for the Chevrolet.

**C. M. Goebel** has been appointed manager of the Chevrolet Motor Co.'s retail branch at 2801 Broadway, Oakland, Cal.

**E. Brunick** has transferred his interest in the Sixty-third Street Garage, 6218 Moneta Avenue, Los Angeles, to **E. L. Clarke**.

**S. F. Seager & Co.**, Jordan and Grant distributors, in Los Angeles, have moved to new quarters at 1400 South Figueroa Street.

**E. L. Cord** has taken over the Allen Agency in Los Angeles. He was formerly Paige dealer in Phoenix, Ariz.

**F. S. Alberson** has taken over the Dodge Brothers agency in Los Angeles, and is now located at 1101 South Hope Street.

**J. K. Purdy** has moved to a new garage at 815 South Grand Avenue, Los Angeles, where he will carry a complete stock of tires and accessories.

**Harold L. Arnold** has become a distributor of Maxwell cars in Los Angeles.

**The White Motor Car Co.** will move to new quarters at 1402 South Figueroa Street, Los Angeles, shortly.

**The Tire Construction Co.** has opened a new store at Seventh and Los Angeles Streets, Los Angeles.

**W. C. Schachtrupp** has opened an agency for Chevrolet cars at 1939 South Main Street, Los Angeles.

**Sargent Brothers** have opened a tire store at 334 West Pico Street, Los Angeles.

**The Ford Owners Assn.** has opened a new store styled Motor Mart, at 1231 West Washington Street, Los Angeles.

**T. H. Sutton & Son** have opened an accessory store and vulcanizing shop at Figueroa and Jefferson Streets, Los Angeles.

**The Utility Trailer Sales Co.** has opened its new building at Fifteenth and Main Streets, Los Angeles. It will distribute the Los Angeles Trailer Co. products.

**L. H. Browning**, formerly of Browning & Norcross, Los Angeles, has opened a new tire store at 1129 South Main Street.

**W. C. McMullen**, who formerly conducted his business at 1010 South Los Angeles Street, Los Angeles, has moved to his new building at 1215 South Los Angeles Street, where he will continue the painting and manufacture of tops, seat covers, etc., under the style "Mack's Paint Shop."

**The Motors Equipment & Tractor Co., Inc.**, has opened an agency at 1310 South Grand Avenue, Los Angeles.

**W. N. Sweeney** has purchased a half interest in Keller's Vulcanizing Shop, Santa Cruz, Cal. This is now styled Keller-Sweeney Vulcanizing Co.

**M. K. Martin Co.**, Tacoma, has opened a vulcanizing plant at 750 Broadway, the old firm of Martin-Stuart Co. having been purchased by M. K. Martin.

**Mueller-Harkins Motor Co.**, Tacoma, Buick and C. M. C. distributor in Tacoma and Pierce County, has moved into a new garage at 722-24-26 Broadway. A complete service plant has been installed.

**Little & Kennedy Co.**, Tacoma, has obtained the Saxon agency for Pierce, Lewis and Thurston counties, which will be distributed in conjunction with the Studebaker and Federal truck.

**Hainsworth Motor Co.**, Tacoma, has acquired the distributing agency throughout Washington and Idaho for the Wilson truck.

**C. S. Furber & Co.**, Centralia, Wash., has purchased the agency there of the Hainsworth Motor Co. and will act as distributor for the Oldsmobile.

**A. H. Averill Co.**, Portland, is now distributing the Russell tractor in Portland and throughout Multnomah County.

**The Pan-American Sales and Service Station**, Portland, has been opened by A. G. Onslow at Twenty-third and Cornell streets.

**The Perfection Asbestos Tire Co.**, Portland, is now distributing Perfection tires throughout Oregon, Washington and Idaho, supplying some 100 dealers in this territory.

**J. H. Graham**, Portland, has opened salesrooms at Tenth and Stark streets, as he has become both wholesale and retail distributor for the Case for the State of Oregon. He will also handle the Chevrolet in Clark County, Washington.

#### SOUTH

**C. C. Codington** has secured the distribution of J. & D. tires in Georgia and Florida, and has opened a branch in Atlanta, from which he will cover this territory. He has had the distribution of these tires in North Carolina and South Carolina for the last 2 years.

**Scarborough & Harvin**, Orangeburg, S. C., have been appointed dealers for the Haynes.

**Edwin & Hicks**, Nashville, Tenn., have added the Scripps-Booth. This is their fourth car. They also have the Nash, Oakland and Maxwell.

**The Herff Motor Corp.**, 288 Monroe Avenue, Memphis, Tenn., has been made distributor of the Briscoe for portions of Tennessee, Mississippi, Alabama, Arkansas, Louisiana and Kentucky.

**The Union Motor Car Co.**, Memphis, Tenn., has increased its capital stock from \$80,000 to \$150,000.

**The Richardson Motor Sales Co.**, Memphis, Tenn., with authorized capital stock of \$50,000, has been incorporated by G. W. Richardson, Charles Lyle, M. V. Richardson and others.

**The Empire Motor Car Co.**, Memphis, Tenn., has been incorporated at \$50,000 by C. M. Bishop, W. L. Huntley, Jr., F. P. Carpenter and others.

**The Nashville Buick Agency** is being operated by Mrs. A. S. Caldwell, her three sons who ran the business all having joined the colors. Mrs. Caldwell is president of the Tennessee Federation of Women's Clubs and active in patriotic and civic work.

#### New Truck Dealers

Alphons Kaelin (Dart).....Louisville  
Askew Motor Co. (Wichita).....Alexandria, La.  
Millers Brothers Motor Co. (Dart).....  
Lake Charles, La.  
C. A. DeJersey (Dart).....Shreveport, La.  
Liddell Motor Co. (Wichita).....Shreveport, La.

#### SOUTHWEST

**The Summit Auto Co.**, Arkansas City, Kan., has moved into new quarters at 120 North Summit Street.

**M. R. Benson**, Anthony, Kan., has opened a supply store.

**The Gelger Motor Co.**, Atchison, Kan., has opened for business. Frank Gelger is owner.

**A. E. Mayhew & Son**, Atchison, Kan., have opened an automobile business.

**Frank W. Simmons**, Belleville, Kan., has added a repair department to his tire service station on the North Side.

**The Farmers & Merchants Battery Co.**, Beloit, Kan., has moved to larger quarters on Main St.

**The Burlington Automobile Sales Co.**, Burlington, Kan., has rented the garage of J. I. Wolfe.

**The Miller Co.**, Clay Center, Kan., has built a service yard for its battery and starter customers.

**W. C. Johnson**, Coffeyville, Kan., has opened an automobile blacksmith shop.

**Thomas L. Hodges**, El Dorado, Kan., has opened a shop for automobile painting over Yingling Brothers Garage.

**Charles and Will Coop**, Elkhart, Kan., have leased the machine and repair department of the Elkhart Garage.

**Elmer Curnutt**, Garnett, Kan., has purchased the interest of his partner, B. C. Johnson, in the K-T Motor Service and is now sole proprietor.

**The Gates Half-Sole Tire Co.**, Hutchinson, Kan., has opened quarters on Motor Row at 108 Sherman East. B. J. M. Vreem is manager.

**The A. A. Doerr Merc Co.**, Larned, Kan., has ceased to operate a repairshop at its garage.

**A. H. Nitsoh**, Lincoln, Kan., has bought the Denmark Garage and repairshop from A. H. Errebe.

**N. B. Rees**, Lincoln, Kan., has bought the vulcanizing plant of Henry White.

**Barton Blakeslee**, Lyons, Kan., has moved his automobile business to a new building on Myrtle Street.

**O. F. Lantz** has moved his garage to Manhattan, Kan., from Oskaloosa, Kan.

**Thomas F. Hays**, Ness City, Kan., has closed out his automobile business.

**Jim Burrows** and **R. A. Kirkman** of the Norton Motor Co., Norton, Kan., have bought the Ward Brothers Garage.

**J. P. Klamm**, Paola, Kan., has added a vulcanizing plant to his J-H Garage.

**The Albers Battery Shop**, Pittsburg, Kan., has opened quarters at 312 North Pine.

**Dick Stewart**, Topeka, has bought the A. J. McKinney Garage.

**The American Car & Garage Exchange** has opened at 511 Quincy Street, Topeka. A. J. Rumsey is in charge of the sales department and C. V. Duvall of the repair department.

**The Quick Service Tire Co.** has opened a sales and service station at 527 Jackson Street, Topeka.

**The E. L. Overton Engineering & Supply Co.** has moved to a new salesroom and battery service station at 502 Jackson Street, Topeka. The new location has more than 10,000 sq. ft. of floor space.

**The Smith Rankin Co.** has taken a store at 527 Jackson Street, Topeka, where Racine tires will be distributed for the Topeka territory.

**The Winfield Battery Station**, Winfield, Kan., has opened quarters at 605 North Main Street.

**Floyd Megle**, Winfield, Kan., has sold his automobile business to C. Rosebrough.

**The Batry Vim Sales and Mfg. Co.**, 210 East Fourteenth Street, Kansas City, is going out of business and closing up its affairs with manufacturers.

**The Bradely Motor Co.**, Kansas City, have opened a garage and salesroom at 1422 McGee Street.

**The Price-Sanmann Motor Co.**, 1804 Grand Avenue, Kansas City, is closing out its business, as the members of the firm, J. F. Sanmann, John Schmalz and Harry C. Lehr, have been called into service.

**The Progressive Tire Corp.**, Kansas City, has been incorporated with a capital of \$20,000 to sell and job tires. The company has located a salesroom at 1318 McGee Street, and the following officers have been elected: F. H. Lynch, president; J. C. Price, secretary, and E. R. Flescher, treasurer and manager.

**The Hiatt Motors Co.**, Buick agency of Kansas City, has 37 stars in its service flag and several more of the employees will be called by the next draft.

**The Beery Porter Tire Co.**, Kansas City, has been incorporated with a capital of \$20,000 and have taken the agency for that district for the Norwalk tires. John W. Beery and Jesse L. Porter are managers of the new company.

**The E. R. Lauer Motor Co.**, Kansas City, has succeeded the branch of the Winton Co., which has been closed. The new company will sell the Winton in eastern Kansas and western Missouri. E. R. Lauer is president and manager.



# Automotive Equipment

## CELL-BEAM SPOTLIGHT IMPROVED

The Cell-Beam spotlight, which is a portable lamp, carried in the side-door pocket, has been materially improved in design and construction. The body of the lamp has been strengthened, the focusing adjustment of the bulb improved, the die-cast handle is fully nickel-plated instead of merely polished as formerly, and a thicker front glass enables the lamp to stand more abuse. The length of the cord has been increased from 5 to 8 ft. and a better grade is used. The 30-cp. G-12 nitrogen Mazda bulb is etched and frosted instead of being coated. The price remains at \$5.—Cell-Beam Mfg. Co., 1101 Bedford Avenue, Brooklyn.



## PATRIOTIC WINDSHIELD EMBLEM

A paper emblem 5 1/4 in. in diameter, printed in red, white and blue, and coated with an adhesive so that it can be attached to the inside of the windshield. It is an emblem of individual patriotic service tendered to "Our Boys," going to or coming from "Over There."—Herschman & Cardy, 167 West Monroe Street, Chicago.

## MAGIC TUBE VULCANIZER

A tube vulcanizing outfit, consisting of clamp and twelve vulcanizing patches, with tin caps containing the fuel for heating. The fuel is ignited with a match, and it is claimed that it will not blow out in the wind, as there is no flame. The clamp holds the tin cap with its attached patch down on the tube. Price of the complete outfit \$2. Additional patches \$1 per dozen.—Magic Auto Devices Co., Lynbrook, N. Y.



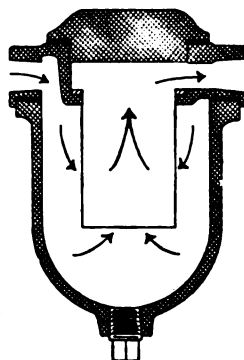
## BLU-STREAK SPARK PLUG

A spark plug with wrapped-mica insulation forced directly into the shell by means of a wedge-shaped or tapered center electrode. No gaskets are used. The outer dome is Bakelite. Furnished in S. A. E. and 1/2-in. threads and in special models for Packard, Ford, Buick, Overland and Knight engines. Model 10 has a visible adjustable gap. Price, \$1.25, or a box of four for \$5. Model 20 is the same in every way except that it has no gap. Price, \$1, or a box of four for \$4.—Cumming-Forster Corp., Chicago.



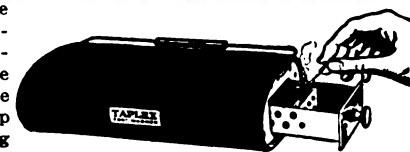
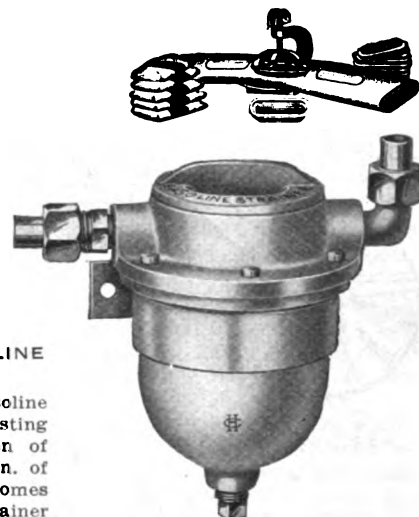
## NORWESCO ANTI-FREEZING SOLUTION

This anti-freezing solution is furnished ready mixed and intended to be used right out of the can. It has a specific gravity of 1220 deg. and the strength can be checked up at any time with a battery hydrometer. If evaporation has made it too dense, water is added, and if too thin, more solution is added. When at its correct strength it is claimed not to freeze at temperatures above 20 deg. below zero. (Cans containing 1 gal. are \$1.25, 3 gal. \$3.45 and 5 gal. \$5.—Northwestern Chemical Co., Marietta, Ohio.



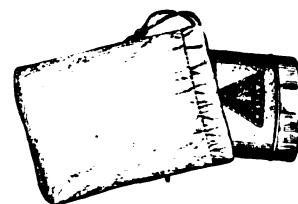
## HOLTZER-CABOT GASOLINE STRAINER

The body of this gasoline strainer is an aluminum casting with a bronze wire screen of 120 mesh with over 6 sq. in. of surface. The gasoline comes into the bottom of the strainer and passes up through the screen, the dirt and water falling to the bottom and being removed from time to time through the screw plug at the bottom. The wire screen cup can be removed by unscrewing the top wing nuts.—Holtzer-Cabot Electric Co., Roxbury, Boston.



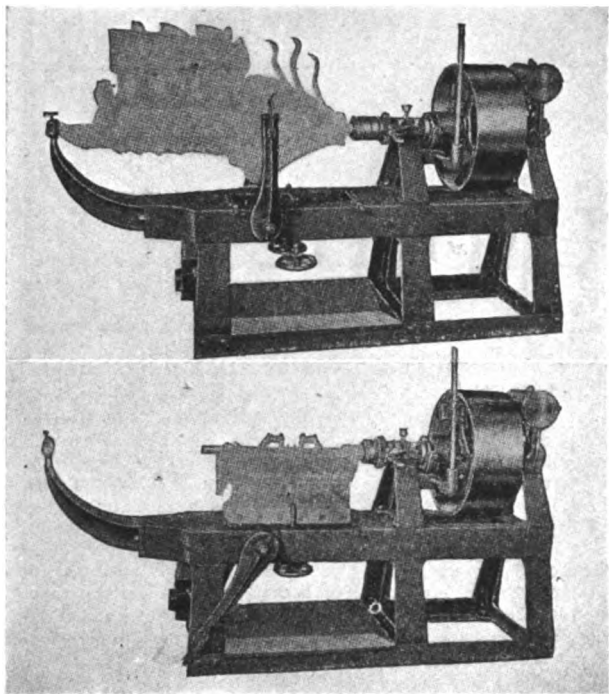
## TAPLEX HAND AND FOOT WARMERS

Taplex warmers are metallic cases lined with asbestos, and burn a smokeless fuel. They burn for about 8 hr. without renewing the fuel. Made in several sizes and shapes for different purposes. The "handy warmer" is of a size to fit the hand, and is furnished in a box together with a khaki bag and a supply of fuel. Outfits range in price from 25 cents to 75 cents, depending on finish, and amount of fuel supplied. The foot warmer is made in two sizes, 14 in. for \$5, and 20 in. for \$7.50, complete, with fuel in each case.—Taplex Corp., Broadway and Thirty-fourth Street, New York City.



## PYRAMID BRUSH ASSORTMENT CARTONS

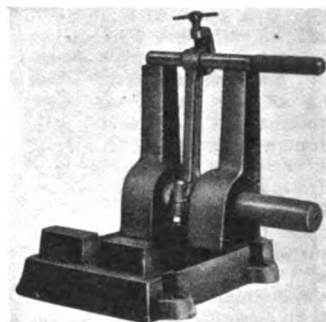
Pyramid brand starting and lighting brushes are now offered to dealers in attractive display cartons. Assortment No. 20 contains 46 brushes of the 15 most popular types. On the back of the carton is a list of the cars on which these brushes are used, over 100 models in all. Price is around \$10.—National Carbon Co., Cleveland.



#### NAZETT BURNING-IN AND WORK-OUT MACHINE

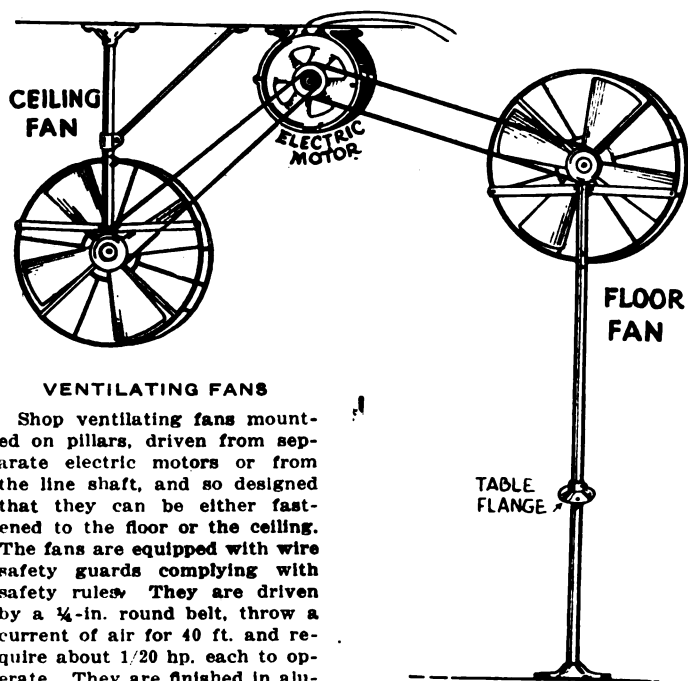
A combined bearing burning-in machine and work-out machine for Ford engines. The main bed is one casting weighing several hundred pounds. A clutch is provided to disconnect the power, the machine requiring from 5 to 7½ hp. to operate. When used as a bearing burning-in machine, the cylinder block is clamped upside down to the bed and adjustments are provided to align the block. The block is quickly clamped in position and the operation is plainly visible. To convert it into a work-out machine, it is only necessary to raise the two side arms, lock them in vertical position and place the assembled engine in an upright position. Adjustments are provided for alignment. Brackets are provided to attach the Ford coil box, and a gasoline tank is attached, ready to connect to the carbureter. Water connections and an oil drip pan are also provided. Price \$250.—Nazett Mfg. Co., 1440 Washington Street, Eldora, Ia.

moving, due to the side sway, and when the truck stops, the pen simply makes a straight line. A simple totaling device quickly totals from the chart the exact running and standing time. It is only necessary to change the charts daily and wind the clock. It is foolproof and tamper-proof, as the working parts are inclosed in a metal case and padlocked. Price, \$28.—Service Recorder Co., East 105th Street & Quincy Avenue, Cleveland.



#### NAZETT FORD CONNECTING-ROD JIG

A Ford connecting-rod jig or aligning fixture with top and bottom bearing arbors, clamp to tighten up on the upper bearing and two machined surfaces at right angles to each other so that alignment for both directions can be tested with the same setting. Price \$30.—Nazett Mfg. Co., 1440 Washington Street, Eldora, Ia.

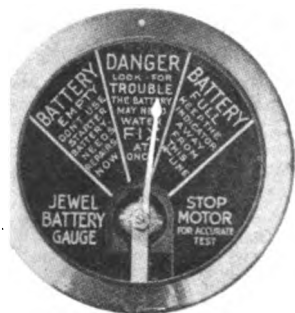


#### VENTILATING FANS

Shop ventilating fans mounted on pillars, driven from separate electric motors or from the line shaft, and so designed that they can be either fastened to the floor or the ceiling. The fans are equipped with wire safety guards complying with safety rules. They are driven by a ¼-in. round belt, throw a current of air for 40 ft. and require about 1/20 hp. each to operate. They are finished in aluminum bronze, have babbit bearings and hard oil cups. The ceiling model with short standard is \$12, the floor model with long standard 8½ ft. high is \$13.50.—Baum's Metal Specialties, 1311-13 Baltimore Avenue, Kansas City.

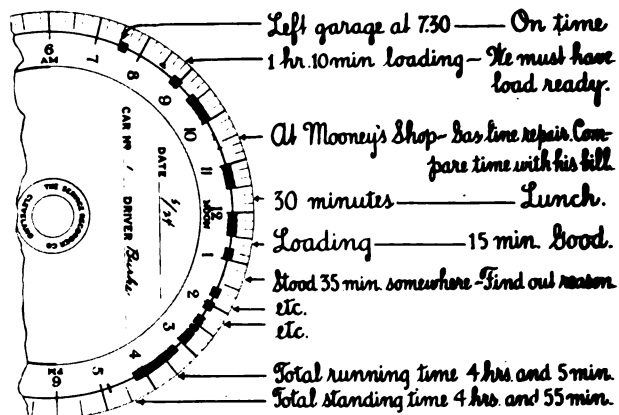
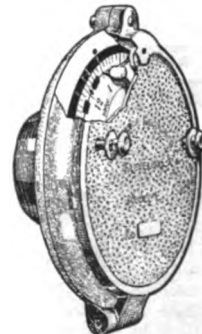
#### JEWELL BATTERY GAGE

A battery indicator which operates on the principle of a voltmeter and indicates whether the battery is full or empty or somewhere in between. Instead of registering volts, the red hand points to one of three "zones" on the dial. It is connected by attaching the ends of two wires to the gage terminals and the other ends to the battery. A current of .01 amperes runs through the gage at all times, so that the hand always indicates the condition of the battery. Furnished in either flush or extension types. Price \$6.—Jewell Electrical Instrument Co., 1646-1650 Walnut Street, Chicago.



#### MODEL E SERVIS RECORDER FOR TRUCKS

This is a recording device for trucks which registers on a circular chart the time the truck runs and the numbers and duration of stops. It is not connected to any moving part, being attached by two bolts to any stationary part of the truck. The circular chart is revolved by clock movement and a stylus pen oscillates when the truck is



# Coal Curtailment Won't Reduce Car Production 75%

*Makers May Produce All Cars They Can if They Cut Coal Consumption to 25% of Last Year*

WASHINGTON, July 15—The coal curtailment for 1918-1919—probably a 75 per cent cut—will not necessarily reduce the manufacture of passenger cars or parts 75 per cent.

The United States Fuel Administration will not estimate its coal reduction by a quantity car or parts reduction.

If a manufacturer of passenger cars or parts reduces his coal consumption for these commodities 75 per cent but discovers an honest method for maintaining his production at 50 per cent of the 1917-1918 period, for example, the Fuel Administration will approve such activities.

In fact the Fuel Administration is in favor of the greatest production possible and compatible with the 75 per cent coal reduction. This was made clear to-day by the Administration in reply to inquiries by Motor World.

The coal allowance to passenger car and parts manufacturers will not be estimated by enforcing a curtailment in the number of passenger cars or parts.

It will be estimated by taking the requirements of 1917-1918 non-war work and cutting it 75 per cent, allowing 25 per cent of the coal consumption last year for non-war work for the 1918-1919 period.

## Trucks and Tractors Exempt

It will apply only to passenger cars, as trucks, and tractors, and the parts for these are considered as war work by the Fuel Administration.

In order to ascertain the proper amount of coal to be used for non-war work manufacturers will be expected to estimate accurately the coal consumption for the 1917-1918 period. They will be expected to deduct 75 per cent from this, and use the remainder as a guide for their 1918-1919 requirements. They will be allowed 100 per cent coal for war work. They will not be allowed to use more than 25 per cent of the coal they have for non-war work regardless of the amount of coal they may have on hand.

While it is doubtful if the United States Fuel Administration has the power to take the surplus coal away from an owner, it has the power through the Lever Act to prevent the owner of that coal from consuming more than the amount prescribed by the Administration regulations.

Manufacturers engaged solely in non-war work can easily learn their position for the 1918-1919 period by checking up the coal requirements for the 1917-1918 period and allowing 25 per cent of that amount for the 1918-1919 period. Manufacturers engaged in non-war work and war work will be expected to observe the following plans:

- 1—Estimate accurately the average amount of coal per piece produced required for heat and power, basing these figures on the 1917-1918 period.
- 2—Estimate accurately the total amount of coal required for the period Aug. 1, 1917, to Aug. 1, 1918. Take 25 per cent of this as the coal allowance for non-war work for 1918-1919.
- 3—Estimate accurately the total amount of war work engaged in. Find the amount of coal required by using the coal per piece rate. Allow 100 per cent coal requirement for the war work.
- 4—Order 25 per cent of coal for the non-war work. Order 100 per cent of coal necessary for the war work. This will be the total coal allowance from the United States Fuel Administration.

## "25 Per Cent" Only Approximate

In using the figures "25 per cent," it is necessary to add that these are approximate.

The United States Fuel Administration has not yet definitely decided upon the actual allowance of coal to the automobile industry.

Dr. Harry Garfield has indicated that it will probably be 25 per cent of the 1917-1918 requirement for the 1918-1919 period.

The entire matter is as yet somewhat vague in the minds of the Fuel Administration.

It is not certain of the exact percentage curtailment nor of the methods of procedure in special cases.

It does not know, for instance, what would be done in the instance of a manufacturer of parts who in 1917-1918 not only supplied passenger cars made during that period but millions of passenger cars made in previous years.

Following is an example of how the manufacturer can approximately ascertain his coal allowance for the 1918-1919 period:

## How the Plan Works

A. B. & Co. manufactured 3,000 passenger cars Aug. 1, 1917-Aug. 1, 1918.

A. B. & Co. consumed 3,000 tons of coal Aug. 1, 1917-Aug. 1, 1918.

# Where Are We Headed For?

*See Page 6*

A. B. & Co. have war contracts for 1,300 passenger cars or for other materials using 50 per cent of its plant.

The U. S. Fuel Administration allows:

One hundred per cent coal requirements for the war work for 1918-1919.

Twenty-five per cent of the 1917-1918 coal used in 1918-1919.

Using 3,000 tons of coal for 3,000 passenger cars, A. B. & Co. average 1 ton of coal per car.

Being allowed 100 per cent coal for war work, it orders for war work: 1,500 tons (war car order or 50 per cent of last year's consumption to meet the 50 per cent war work in their plant).

Being allowed 25 per cent of the coal consumed in 1917-1918 for non-war work, it orders for non-war work: 750 tons of coal, which is 25 per cent of the 1917-1918 consumption. Thus the complete order is: 1,500 tons for war work, 750 tons for non-war work, 2,250 total allowed for war and non-war work, which is 75 per cent of the 1917-1918 coal.

## Concession on Body Freight

WASHINGTON, July 15—Whereas a 33 1/3 per cent increase in the freight rates on bodies was proposed 6 months ago, the increased classification has been applied mostly to enclosed car bodies, according to a decision handed down to-day by the Interstate Commerce Commission. Open car bodies are little changed.

The rate also applies only on eastern roads and not on those in the West and South.

The rates in the East, South and West, which are the three railroad rate divisions of the country, were three times first-class on all bodies. When the rates were raised last fall all bodies were listed as four times first-class in the East. No change was made in the three-times-first-class rate in the West and South.

The National Automobile Chamber of Commerce asked for a temporary suspension of this increase and for a hearing, which were granted. The hearing was held in January. The result is that the rate is raised to four-times-first-class on all bodies over 36 in. in height and remains three-times-first-class on bodies under 36 in.

A comparatively small percentage of touring and roadster bodies exceeds 36 in. in height, which causes the rate to affect enclosed car bodies mostly. The arguments of Traffic Manager J. S. Marvin of the N. A. C. C. at the hearing were mostly technical and did not relate to the essential character of different classes of bodies.

## Davis Heads Grossman

NEW YORK, July 15—Changes have been made in the management of the Emil Grossman Mfg. Co., Brooklyn, which makes Red Head spark plugs, Ever Good bumpers and other automotive equipment. H. W. Davis, who is vice-president of the Finance & Trading Corp., 43 Exchange Place, has succeeded Emil Grossman as president; K. P. Collins, who is also connected with the Finance & Trading Corp., has been made vice-president, succeeding L. M. Schwarz.

## Two New Products for Redden

### 4-Wheel Trailer and Universal Truck Maker Added to Ford Attachment

CHICAGO, July 15—The Redden Motor Truck Co. has started the manufacture of a universal truck maker which can be fitted to any make of passenger car, converting it into a chain-drive truck, and also a 4-wheel, 2-ton trailer. The manufacture of the Redden Ford attachment for converting a Ford car into a truck which has been going on for several years will be continued.

The Redden Universal truck maker can be fitted to any make or model of passenger car, regardless of whether the gearset is in the rear or amidships, and it attaches equally well to chassis with semi, three-quarter, seven-eighths or full-floating axles. No machining or milling is required and only four tools are necessary to effect the transformation.

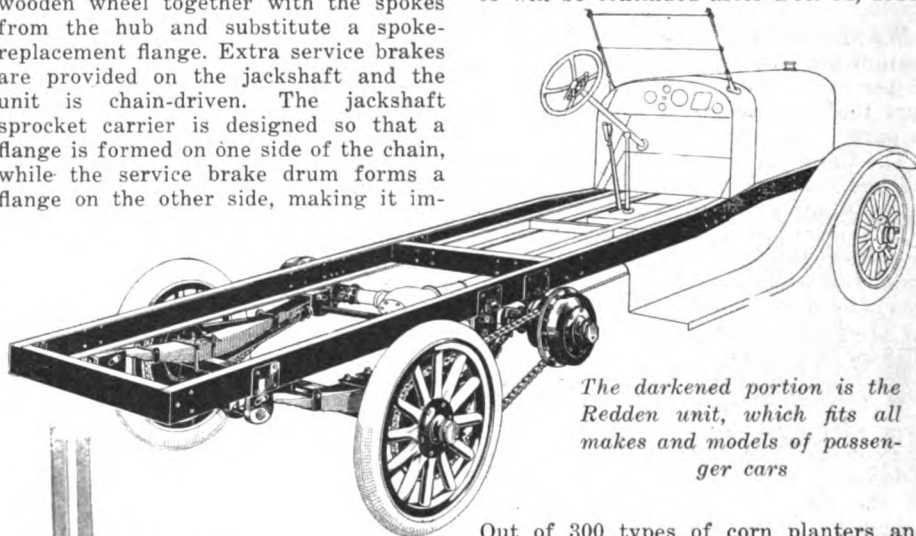
shape of axle known except underslung types.

It is only necessary to remove the wooden wheel together with the spokes from the hub and substitute a spoke-replacement flange. Extra service brakes are provided on the jackshaft and the unit is chain-driven. The jackshaft sprocket carrier is designed so that a flange is formed on one side of the chain, while the service brake drum forms a flange on the other side, making it im-

trailer is reversible. The price of the equipment is \$590.

#### Eliminate 3000 Farm Implements

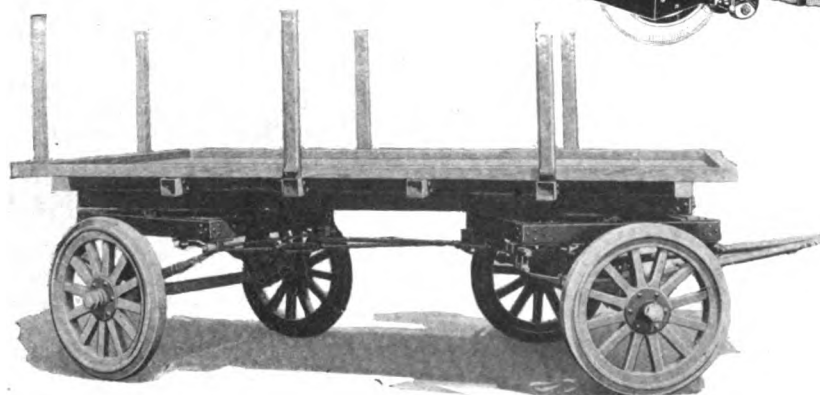
WASHINGTON, July 13—For the conservation of iron and steel, the War Industries Board has ordered a reduction of more than 3000 in the number of types of plows and tillage machinery for the farm. Out of 303 types of plows only 65 will be continued after Dec. 31, 1918.



The darkened portion is the Redden unit, which fits all makes and models of passenger cars

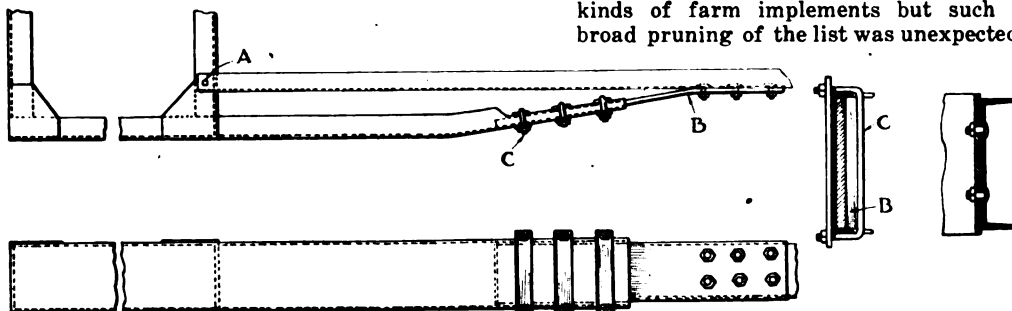
Out of 300 types of corn planters and drills only 10 will be continued and out of 107 types of harrows only 44 will be continued after this date.

This reduction in number of sizes will do a great deal to reduce the size of stocks carried by the manufacturers as well as by distributors and dealers and will consequently lower the required capital needed for carrying on business. It has been known for some time that there were too many models of different kinds of farm implements but such a broad pruning of the list was unexpected.



Above—The Redden trailer, in which all four wheels turn when the draw-bar turns, so that the vehicle tracks with the truck

Right—Side members of the Redden Universal Truck Maker, showing how it is adjustable for all width frames



The illustrations show various parts of the frame-attaching member. Directly above is the side-frame member of the passenger car. Attachment to the truck maker is made at A with bolts or rivets, and owing to the slant or angle of the front end, the member B can be slid in or out to suit the frame width of the car, then locked in this position with the U-bolts C and drilled for bolts or rivets. The other illustrations show sections through the attaching member.

#### Universal Axle Hanger Used

A universal axle hanger is used in clasping the passenger-car-axle-housing firmly in position, and this axle is used as a jackshaft. The axle is not shortened or cut or altered in any way, but is clamped in the hanger, which is so constructed that it will take any size or

possible for the chain to jump off the sprocket.

The Redden trailer is so constructed that all wheels turn when the drawbar is moved from side to side. The same grade axle is used as on the Redden universal attachment, and springs of ample strength are attached to the subframe, which in turn is attached to the main frame by means of a center or king pin.

Each set of wheels has a fifth wheel, allowing both front and rear axles to turn, the two subframes being attached to each other with a cross-bar arrangement which gives them both the same turning radius. The cross-bars have turnbuckles so that this feature can be adjusted. The wheels are of the artillery type with solid rubber tires 34 x 3½ in., and revolve on roller bearings. A rugged drawbar attaches to the axle and the

The plan was the result of co-operative work by the industry. The tractor plows involved follow. Those prohibited for manufacture will be discontinued after Dec. 31, 1918:

Light tractor plows, rigid beam, power lift, 2-3-and 4-bottom, 3-wheel, will be made in 10 in., 12 in. and 14 in. only.

Heavy tractor plows, 14 in. only, will be made in 4-bottom, 5-bottom, 6-bottom and 8-bottom only.

Medium duty tractor plows, rigid beam, power lift, 3-wheel will be made in 3-bottom 14 in. and 4-bottom 14 in. only.

Heavy engine disk plows will be restricted in manufacture to one type to each maker with 2 to 10 disks, set and equipped to cut from 20 in. to 100 in.

Light tractor disk plows will be restricted to one type only by each manufacturer, equipped with 2, 3, 4 and 5 disks.



# Where Are We Headed For?

(Continued from page 7)

airdome proprietor who wanted a sharp, shrill tone.

"We have pianos at all prices and for all purposes, and the men must know which is which. If there is a use for which our pianos are not suited, I would rather the sale would go elsewhere.

"But every automobile salesman who came in here wanted me to buy his car because it had six or twelve cylinders, a new style carbureter, or a left-hand steering wheel. One man tried to sell me an \$1,800 car when it was a cheap truck I wanted—as I found out later."

## Accessories

In the accessories, too, there is an interesting parallel. The piano men did not learn the full lesson when the department stores took the sheet music away by closer merchandising methods and a liberal use of advertising. A piano sales manager tells of the situation as follows:

"When the player piano came, it brought with it the rolls that are a constant need if the player is used, and most players are. We neglected the rolls, and some houses started giving large selections with the player. Some still do. Piano men have something to learn.

"But we were not entirely foolish about this rolls proposition. At one time any man who would have taken the player rolls off of our hands would have been welcomed. Indeed, some of us considered a mutual arrangement whereby we would hire some one to establish a player roll supply house.

"But we finally found ourselves and did not let this get away from us, as the motor car men did the accessory business. Most piano houses now have a roll department. I know of one house that on a recent day did not sell a piano, but sold enough rolls to make a profit net of \$15 for that day. That certainly is worth considering.

## Accessories Bring Leads

"But a bigger and better value is the close organization it builds up between our satisfied customers and the house. The roll departments pick up prospects for player sales constantly. They also learn who is not satisfied. Since this narrow escape from losing this profitable part of our business, most piano houses have seen fit to put their tuning and service departments on a profitable basis, so now we have two sources of constant revenue.

"It is true that many piano men overlooked the talking machine as a source of a profitable and a big business. But most piano houses now sell talking machines, and they have found it easy to step into the leadership in this line. The talking machine records form the basis of a business that pays the running expenses of many piano houses.

"There is one part of the business that

we must acknowledge that the motor car people have the better of us.

"They seldom give away accessories. Piano men have for years given an extra stool or bench, a scarf and a free tuning or two, and some went out of their way to arrange for a course of lessons for any member of the family of the purchaser.

"That was all wrong, and I like to believe that it was the glaring mistake made by piano men that contributed to the motor car men taking the firm stand that they did. But I know from experience that it is possible to drag concessions from motor car men, and I will add to that that the men I know who gave things away have either gone broke or have reorganized their business with non-givers in executive positions."

One thing the piano trade discovered a long time ago that is just reaching the motor car trade is what some motor car men are calling the "cycle of sales." Years ago the writer heard a piano sales manager say to a country dealer who had told of unremunerative efforts at selling for two months:

## The Cycle of Sales

"Tom, I'm sorry to lose you, but I think you have filled up that community on our line, and we have nothing else to give you. My advice is to keep those two instruments of ours you have as stock, and go over to K—— and take on his agency. Their best seller is \$100 less than ours and their good one \$250 more. You can do some business for them for a year or two and then come back to us."

This man was selling one of the best known and best advertised lines in the country, but he had only one price. He had met the same thing before. He knew that a small community would get saturated with instruments of certain make and price.

Motor car distributors who have only a one-price line are learning the same thing. A distributor with two, three or four lines can let his country dealer specialize on one at a time, and pick up a few sales for the other cars as he goes along. A sub-dealer often makes a great record in a small town with a certain car one year and the next year cannot start anything with that car, but if the distributor suggests that he take up a higher-priced car, he will have another good year.

A St. Louis distributor who has four cars in his line said recently: "We get some fine dealers from distributors who have but one line. The dealers come in here, saying their community wants our car and will not take the car they are selling any more. 'They're filled up on them out our way,' is the common expression. We never lose dealers for that reason. If they slow up on the \$800 car, we turn them to the \$1,100 or the \$1,600, and sometimes they will have a good

season with \$2,200 cars, after a good season with the \$800."

And so, while cars are not pianos and tires are not talking machines, it may be affirmed that no trade or man has a monopoly on methods or problems. If you want to know how to solve a problem of the cigar trade investigate a butcher's methods. Fundamentals are universal and age-old.

Conditions may be such that the history of the piano trade will not entirely repeat itself in the automotive trade—but it's something WORTH THINKING ABOUT.

## Old Dogs and New Tricks

(Continued from page 16)

leaders and authorities. They were once, so why not always? seems to have been the way they reasoned. They shut their ears to the stories of what must be done if a man were to succeed. They maintained a high and lofty attitude toward those who favored progress and real business methods. They have hung together, a diminishing group of them, and even to-day you'll find them working along the old lines and explaining why they haven't been more successful.

"Louis was in this class. He knew all the old-timers. He could look back to the days when he was the leader in the trade in Callawassa and was known all over this part of the country. But he looked backward more than forward. He tried to ride on the prestige of a day that has gone. He continued to play the old tricks after the game had changed and was no longer a game. Dame Fortune cracked the whip and he wouldn't jump. He didn't fail; the trade merely went forward and he was left behind with the other old dogs and the Kings of Can't Be Done."

## Picturing Farm Light for the Farmer

(Continued from page 9)

The amount of business done by the Alamo Farm Light Co. up to the time of putting in this sales demonstration was virtually negligible. Now the Rock Island Plow Co., its distributors here, does a monthly business of over \$20,000 in Alamo systems, and fifty other distributors all over the country are busy with them. Some do much more than the Rock Island people. One Ford dealer up in Michigan runs close to \$50,000 per month in the farm light systems. And every one of them knows how to demonstrate the plants.

Where dealers have not found it convenient to establish miniature demonstration plants along the line of that in Omaha they bring their prospects along with them on visits to this city. They have brought them from 150 miles out in the state to see it. It tells the prospect something that words fail to express. It delivers. It answers the questions before they are asked.

## Lists Grow for Big Salina Tractor Meet

### Sixteen Tractor Makers Have Signed Up—Implement and Equipment Men Are Coming

SALINA, KAN., July 12—Lists of equipment and implement manufacturers are growing steadily larger as the date for the National Tractor demonstration, July 29-Aug. 2, draws nearer. To date sixteen equipment makers and a similar number of makers of farm implements have signed up. Following is the list of exhibitors:

#### Tractors

Avery Co.	Peoria
Square Turn Tractor Co.	Chicago
Hart Parr Co.	Charles City
Holt Mfg. Co.	Peoria
Nilson Tractor Co.	Minneapolis
Moline Plow Co.	Moline
Dauch Mfg. Co.	Sandusky
Parrett Tractor Co.	Chicago
Russell Co.	Massillon
Gile Tractor & Engine Co.	Ludington
Advance Rumely Thresher Co.	La Porte
Aultman & Taylor Machine Co.	Mansfield
Rock Island Plow Co.	Rock Island
Gray Tractor Co.	Minneapolis
La Crosse Tractor Co.	La Crosse
Cleveland Tractor Co.	Cedar Rapids
Hession Tiller & Tractor Co.	Buffalo
Four Drive Tractor Co.	Big Rapids
Vellie Motor Corp.	Moline
American Tractor Co.	Peoria
Lyons-Atlas Co.	Indianapolis
J. I. Case T. M. Co.	Racine
Emerson-Brantingham Co.	Rockford
Wallis Tractor Co.	Peoria
Frick Tractor Co.	Wainsboro
Waterloo Tractor Co.	Waterloo

#### Implements

P. N. C. Plow Co.	Ancton
Oliver Chilled Plow Works.	So. Bend
John Deere Plow Co.	Moline
Grand DeTour Plow Co.	Dixon
Vulcan Plow Co.	Evansville
So. Bend Chilled Plow Co.	South Bend
Turner Mfg. Co.	Port Washington
La Crosse Plow.	La Crosse
I. H. C. Co.	Chicago

#### Equipment

McQuay-Morris Mfg. Co.	St. Louis
Hyatt Roller Bearing Co.	Chicago
Timken Roller Bearing Co.	Canton
Diamond Chain Co.	Indianapolis
Am. Manganese Steel Co.	Chicago
Buda Motor Co.	Harvey
Sumpter Electric Co.	Chicago
Bosch Magneto Co.	New York
K-W Ignition Co.	Cleveland
Modine Radiator Co.	Racine
Hooven Radiator Co.	Chicago
Vacuum Oil Co.	New York
Gurney Ball Bearing Co.	Jamestown
Automotive Parts Co.	Indianapolis
S. K. F. Ball Bearing Co.	Hartford
B. D. Nuttall Co.	Chicago

### Craig Leads Janesville G. M. C. Plant

MILWAUKEE, WIS., July 15—The reorganization of the Janesville Machine Co., Janesville, Wis., manufacturer of farm machinery, under the direction of General Motors Corp., Detroit and New York, which recently acquired the controlling interest, has been completed. The capital stock is \$2,250,000, divided into

12,500 preferred and 10,000 common shares. The former capital was \$750,000. Officers have been elected as follows: President, J. A. Craig; first vice-president, A. P. Lovejoy; second vice-president, G. V. Sullivan; treasurer, M. G. Jeffris; secretary, E. B. Davis. Mr. Craig was general manager of the company under the former ownership. General Motors made a deposit of \$1,095,000 in the First National Bank of Janesville on the day the transfer formally was made. As already noted, the main purpose of General Motors in acquiring this property is to effect a coalition based upon the establishment of a large tractor plant in Janesville. Construction work will begin this week.

### Tractors Coming from Texas

ORANGE, TEXAS, July 12—The Blumberg Mfg. Co., San Antonio, will build a plant at Orange for the manufacture of farm tractors. In some respects the new tractor will be considerably different from any now on the market, it is stated. It will be adapted specially for use upon rice plantations and other irrigated farms.

### St. Louis Sees the Fordson

ST. LOUIS, July 15—The first exhibit of the Fordson tractor in this community was given Wednesday, under direction of the Bagley Motor Co., East St. Louis, Ill. Two St. Louis society women who took the Ford training course in the assembly plant here drove the tractors in the plowing field. Many farmers and all of the tractor salesmen in the community witnessed the trials.

### Chandler To Have New Tractor Units

CLEVELAND, July 12—Plans have been completed and contract awarded for two more tractor buildings and the enlargement of two offices buildings for the Chandler Motor Car Co. One building will be 44 x 220 and the other 30 x 240. They are to be erected on the same side of E. 131st Street as the large tractor building recently completed. The enlargement of the office buildings will double the floor space.

### Reduce Rate For Road Material

WASHINGTON, July 13—It is probable that the 20-cent per ton freight rate for stone, gravel, sand and slag promulgated by order No. 28 of the Railroad Administration will be reduced to a flat rate of 10 cents per ton. It is also probable that the 40-cent rate on brick will be cut to 20 cents. These reductions are likely as a result of the protest made here this week by the American Association of Highway officials, Highway Industries Association, The Portland Cement Association and the National Paving Brick Association which met with the Committee under Judge Prouty and discussed the inequalities and injustice of the rates. Judge Prouty's Committee hears all of the freight rate protests.

## Ford Buying Sites for Tractor Plants

### Plans to Have Establishments in Center of All Sections—Sold Out for 12 Months

DEARBORN, MICH., July 12—Henry Ford & Son has bought a large water powersite in Hamilton, Ohio, where the company will erect a manufacturing plant for the assembly of Fordson tractors. Operations for constructing the buildings will commence in 30 days. It is expected the company will be in production within 90 days. A similar site has been purchased in the New England states, the exact location of which is not announced.

With the acceptance of an additional order from Illinois for 3,000 Fordson tractors, the production of the Dearborn plant is entirely sold out for the next 12 months. Orders on the books of the company aggregate 50,000 tractors, and no further orders are being accepted. Production is steadily increasing, and before the end of the month a daily output of 150 tractors will have been reached.

Instead of having branches the company intends to establish tractor plants all over the country. The Ohio and New England states plants will assist in supplying part of the 50,000 tractors that are now on order.

Foreign shipments are now being made to the following countries: Peru, Japan, Africa, Fiji Islands, Sumatra, Java, Ceylon and Philippine Islands. The company is experimenting with packing for foreign shipments. It is striving to reduce the cubical contents of its cases with the least amount of disassembling of its tractor.

### Baltimore Branch for Republic

BALTIMORE, July 13—The Republic Motor Truck Co., Alma, has established a factory branch here, taking over the business of Habersham-Miller, Inc. L. Van Buskirk, formerly of the Studebaker Corp., is president and general manager of the reorganized company, Herbert L. Charlack vice-president, and A. J. Kenny secretary-treasurer. All of the men have been associated with the Republic Co. for some time. The company retains its old name.

### Dent Parrett Commissioned a Captain

CHICAGO, July 16—Dent Parrett, president of the Parrett Tractor Co., has been commissioned a captain in the Ordnance Department, with headquarters at Peoria. His work will be the co-ordination of engineering, production and inspection in the factories in the Middle West that are building tractors for the Ordnance Department. The directors of the Parrett company were unanimous in permitting Capt. Parrett to retain the presidency of the company, and accept his commission in the service.

# Philadelphia Garages Revolt

*Decline to Co-operate with Dealers in War Conservation Plan—Situation Very Much Unsettled*

PHILADELPHIA, July 13—Garagemen in Philadelphia, not only members of the Philadelphia Garage Association, but also the "independents," or those unaffiliated with the organization, do not intend to co-operate with the Philadelphia Automobile Trade Association in closing garages, accessory shops and service stations daily after 6 p. m. and on Sundays.

This was made certain when both association members and independents declared their stand to a representative of Motor World. They appear to feel, almost to a man, that the automobile dealers are trying to make them enter into an agreement which, if it were to benefit anybody, would not benefit either the public or the garagemen.

On the other hand, the Philadelphia Automobile Trade Association, which has adopted, without exception as to membership, the plan of closing suggested by the War Economy Board at Washington, takes the viewpoint that it is better for the garagemen to enter into the plan voluntarily, than to wait until a government order is issued compelling such observance.

In short, the garagemen will remain open as usual unless asked specifically by the Government to observe the closing plan, in which case they will unquestionably obey at once, but the order's issuance they regard as not only highly improbable but unpractical as well.

Stating the stand of the Philadelphia Automobile Trade Association, A. E. Maltby, president of the organization and a director of the National Automobile Dealers' Association, said:

"The garage association held a meeting the other night, at which opposition to the closing plan seemed to develop, though when I talked with George G. Blind, president of that association, before the meeting, he appeared to favor the closing plan. It is better for the garagemen to come in with us than for the War Economy Board to act in the matter.

"If the garagemen continue opposition it is probable that the National Automobile Dealers' Association may take up the matter, and that may carry added weight.

"Our association in Philadelphia has agreed to the proposition to a man."

Asked if it were likely that an effort would be made in the near future to bring the automobile and garage trade associations together, or have representatives from each body discuss the closing plan in conference, Maltby said he thought it probable, and that continued effort would be made to get the garagemen's co-operation.

"We wrote the garage association a letter, explaining in full the closing plan

and our stand in the matter," Maltby added, "but they have not seen fit to act with us, yet."

John R. Fox, secretary of the Philadelphia Garage Association, said:

"The Philadelphia Automobile Trade Association seems disposed to tie us up to a plan in which we have not been consulted. We stand ready to assist the Government in what they may want us to do. I have written, for our association, to the Economy War Board at Washington, asking for a statement of the board's attitude on the question, and unless we are told to stop we shall keep right on as we always have. The automobile trade sells the cars and it's up to us to take care of the public's cars after they get them. That's our business. How would the automobile trade association act if we went ahead and tried to tie them up to a plan started at a meeting at which we were not even represented? I see no reason for us to close until the Government asks us to. In that case we would do so.

"The garage association, by taking in 35 additional members at its last meeting, now has on its roll 92 per cent of the garages of standing in Philadelphia."

T. A. Atkins, Jr., treasurer and superintendent of the Pennsylvania Garage and Service Company of Philadelphia, one of the largest concerns of its kind in the United States, occupying its own "skyscraper" building at 329-335 South Broad Street, speaking for the house and "independents" generally, said:

"We do not consider it any trade association's business what days and hours we choose to keep open or closed. Unless asked to close by the Government we shall pay not the slightest attention to any action taken by any organization in any trade. Our business is taking care of motor cars for the public, and there is not the slightest economy in labor or light or anything else in 'closing' in the way the automobile trade association suggests. The building has to open just the same, the men are here and the lights are on. There would be no economy in refusing to do work on cars. We have Emergency Fleet Corporation cars here; we would have to fix them. Philadelphia, because of its motor cars, both passenger and commercial, working for the Government directly and indirectly, is the last place in the country that should advocate closing garages after 6 p. m. and on Sundays."

Other "independents" interviewed expressed similar views.

George G. Blind, president of the Philadelphia Garage Association, said regarding the situation:

"If the Government really wants us to close our places of business, either gaso-

line or repairs, let it tell us so and we will gladly comply. We want some authority for doing so, however."

J. E. Gomery, of the Gomery-Schwartz Motor Car Co., secretary of the Philadelphia Automobile Trade Association, said in substance:

"I understand there is some opposition to closing among the garagemen. I don't think it would make much difference to us whether they closed or not. The closing plan is all right and won't hurt our business. Why should the automobile dealers keep open to take care of car owners who keep unearthly hours? In the small towns a great deal of business used to be done after 6 p. m., but it doesn't fit into modern conditions in a big city. The automobile business is like any other, and there is no reason for the dealer to stay open long hours to please a few customers."

Representatives of both the Atlantic and Gulf Refining Oil companies attended the meeting of the garage association, at which it was resolved to empower Fox to write to Washington. The oil company representatives are reported to have expressed their opinion privately that the association is right in its attitude to keep open as formerly unless told to close by Government authority.

## Louisville Tire Dealers Insurgent

LOUISVILLE, July 15—Contrary to a previous announcement published in the newspapers that they had adopted the recommendations of the War Economy Board regarding service during the continuance of the war, the tire dealers of Louisville are keeping their stores and shops open as usual at nights and on Sundays. Previously it had been announced that they would be closed at 6 p. m. every evening and on Sunday, beginning July 7. Two of the tire dealers withdrew from the agreement and the rest followed. One of the dealers stated that when he signed the agreement to close that he understood the gasoline stations also would close. When he learned they were not included, he withdrew. The majority of the tire dealers in Louisville favor closing.

## Los Angeles War Service

(Continued from page 16)

nature of a utility. Many truck owners depend upon regular operation of their trucks to pay for them, and since they were nearly all sold on lease contracts anything that would interfere with collections was regarded as harmful to the interests of the dealers. This brought about an exemption clause for commercial vehicles in the resolutions that finally were adopted.

After having decided upon a flexible service policy the question of making it public by publication in the daily press was discussed and such action was not deemed advisable for the present. Instead the new rules have been printed in poster form and are prominently displayed in every association member's establishment.

## War Meeting Staged by Ohio Association

**Discusses Latest Phases of Situation  
—Dealers Start School to Train  
Mechanics for War**

COLUMBUS, July 12—In order to prevent damage to the automobile industry by the circulation of baseless rumors regarding curtailing of cars and gasoline and to encourage the observance of the rules promulgated by the War Industries Board, a big meeting of the Ohio Automobile Trade Association was held at the Virginia Hotel, Columbus, July 10. The meeting, which was by far the best in the history of the association, was attended by approximately 150 men from practically every part of the State. The members went away enthusiastic over future prospects.

The following questions had been propounded so frequently to the Ohio association and its officers that a meeting was thought to be necessary to clear up the disputed points:

1—How the "Work Or Fight" order will affect your business?

2—What is the prospect for new cars?

3—Whether there is a scarcity of tires?

4—If there will be enough gasoline to go around?

5—What can be done to relieve the shortage of mechanics?

In addition to members of the association many non-members, having received the notice from Victor Moon, manager, were in attendance. Before leaving, practically 100 per cent of the non-members had united with the organization, which is now known as the one association which is in the foremost ranks to bring about needed reforms in order to aid war work.

Arrangements had been made by Manager Moon to have an expert handle each of the subjects contained in the notice of meeting. Frank V. Houser of the State Draft Board spoke on the "work or fight" order. B. A. Matthews, Columbus representative of the Standard Oil Co., spoke on the gasoline situation. A. E. Mitzel, of Canton, president of the association, told of the prospects for new cars. A. T. Waudell of the Good-year Tire & Rubber Co. told of the tire situation, and Andrew Auble and Frank Girard told of the methods being employed to train mechanics.

The mechanic question was one of the biggest things considered by the meeting. It is clearly recognized that the training of mechanics is one of the crying needs of the time. To bring about a better supply of mechanics, both for garages and repairshops and for war work, the Ohio Automobile Trade Association has started two schools in Ohio, both directly under the control of the local association.

A school was started in Akron several months ago and the first class was

turned out recently. This class numbered 55. Another class has been started. This work was explained in detail by Andrew Auble of Akron.

Frank J. Girard, president of the Columbus Automobile Trade Association told of the school for mechanics in the Buckeye capital. He said that fully 65 men had joined and the first lecture was given in the Chamber of Commerce Auditorium July 8. It is the plan of the Columbus school to hold one lecture and several practical sessions weekly. The practical sessions will be held at the various salesrooms and garages of the city.

Much interest is shown in the course, and plans are now under way to start a school for automobile workers which will not be so exhaustive as the school for mechanics but which will educate owners.

### Birmingham Dealers Organize

BIRMINGHAM, July 12—The Birmingham Motor Trades Association was organized last night with Ted Brownell president. The organization meeting was attended by representatives from practically every automobile agency and accessory establishment in this city. Other officers named in addition to Brownell are: Vice-president, Hubert Drennen; treasurer, E. B. Crawford; directors, E. B. Crawford, H. H. Bailey, R. C. Lees and I. L. Perkins. It is proposed that the duties of the secretary will include the operation of an information bureau, and the promoters of the new association are anxious to obtain the service of a man who is thoroughly conversant with the automobile industry and the condition of highways and tourist travel in this section of the Southeast. Firms dealing in tires, batteries, painting or accessories of any kind are being solicited to join the new organization.

### Cadillac Conserves Steel

DETROIT, July 10—The Cadillac Motor Car Co. has issued a bulletin urging its distributors to do everything possible to assist in the conservation of steel, and asks that instructions be passed on to shop foremen and workmen to co-operate in every way they can.

The company cites in its communication to the dealer organization instances of paying hardware prices for steel. Rather than throw away and replace a bent or dented fender, the bulletin points out that it should be straightened. There are many parts about a motor car, especially steel stampings, which are liable to damage by accident or misuse, and unless these are injured beyond all possibility of repair, it is suggested that they be restored to their original condition, or as nearly to it as possible.

It is suggested that dealers may have an accumulation of such parts replaced before the scarcity of material became so pronounced, that could be put into first-class shape and used again where replacements are absolutely necessary.

## Trade Startled by Taxation Proposals

**Ways and Means Committee Not  
Believed in Favor of Radical  
Revenue Plan**

WASHINGTON, D. C., July 15—Inasmuch as the committee of the National Automobile Dealers' Association recently proposed a revenue plan to the Ways and Means Committee of the House of Representatives, and the plan seemed to find favor, both the trade and the congressional committee were somewhat surprised when the recent tax recommendations came from the Treasury Department.

If carried through these recommendations might result in a tax of 10 or 20 per cent on car sales, and, if revenue were the real object of the plan, sales would be so restricted that there would be little revenue.

The dealers favored a reasonable wheel tax or license fee on all the 5,000,000 cars in America and, if absolutely necessary, a slight increase in the 3 per cent car sales tax. They, however, declare a tax of 10 per cent would be prohibitive and are wondering whether it is the Government's intention to force them out of business.

While no definite conclusions were reached by the Ways and Means Committee following a day spent in going over each item mentioned, it was plain that the majority of the members are in favor of a high increase in the tax on passenger cars, probably to 10 per cent. At the same time the majority are against a tax on gasoline for the reason that numerous inequalities would result. It was pointed out that motor trucks performing valuable services in relieving transportation and passenger cars engaged in utilitarian work would be unjustly taxed. If a plan could be devised so that gasoline used for recreation purposes could be taxed separately it would find favor, but since this plan is practically impossible it is felt unwise to place a wholesale tax on it.

Many members of the committee found the recommendations important. Several stated frankly that they would not give them serious consideration. One member said, "These recommendations propose to tax everything except the coffin one might be buried in." Another added, "And it might tax that too, for anything better than a rough pine box might be regarded as a luxury."

The committee returned the list to the Treasury Department with a request for an estimate of the taxes it would yield. It is believed that in view of the greatly decreased consumption that would accompany such exorbitant taxes that the Treasury Department will find it difficult to furnish an accurate estimate of the revenue that would result.

The Treasury Department in proposing the taxes stated: "The object of the proposed taxes is not only to raise revenue



but to discourage wasteful consumption and unnecessary production. Waste and extravagance are akin to treason."

The theories of Frank E. Vanderlip, chief exponent of the "cut it out" war policy, are plainly discernible in these suggestions, as are also the recommendations made recently before the Ways and Means Committee by Prof. Oliver M. Sprague of Harvard University. Vanderlip is firmly opposed to the production of anything not directly connected with the war.

The Treasury Department is much perturbed at the publicity given its recommendations. Apparently the convictions behind the suggestion are not entirely in accord, or as substantial as appears. Or it may be that personal interests urge the secrecy with which the department is surrounding its share in the matter.

At the office of George Cooksey, assistant secretary of the treasury, from where it is said the recommendations were issued to the committee, comment was refused in reply to a request for interpretations.

No replies were given to the inquiry as to how motor trucks or motorcycles could be regarded as luxuries. It was impossible to learn just what is included in the term "truck units" mentioned in the plan. No answer was made when it was pointed out that the tires, gasoline, license and purchase taxes would make the operation of motor trucks prohibitive and destroy the important aid they are rendering to transportation.

Hearings on the revenue bill continue. Chairman Kitchin said to-day that the measure would be drafted within the next 30 days and be ready for presentation in the House late in August.

The taxes suggested include: Retail sales tax; 20 per cent on passenger cars, trailers, truck units, motorcycles, and tires for automobiles, motorcycles and bicycles.

Producers or manufacturers tax: A license tax on passenger cars based on horsepower as follows: Twenty-three hp. or less, \$15; 24 to 30 hp., \$25; 31 to 40 hp., \$40; over 40 hp., \$50.

To be paid by wholesale dealers: Ten cents per gallon on gasoline.

To be paid by consumers: Twenty-five per cent of the wages paid to domestic chauffeurs.

#### First Ford Eagle Launched

DETROIT, July 12—Without a semblance of ceremony and with less than a hundred spectators outside of the Ford employees and the naval men, Ford's Eagle-1 was launched on the afternoon of July 11. With hardly a hitch the 200-ft. boat was brought out of its housing and lowered into the water. Unlike other launchings where boats are built on ways at the edge of the water, the Eagle had to be conveyed a distance of about 500 ft. before it could be placed in the water. This new type of sea-fighter or submarine chaser is assembled on a long conveyor somewhat resembling an elongated freight car. When completed the boat is pulled on its conveyance to a transfer table and brought to the launching well.

## Milwaukee Planning Usual Show at Fair

**Will Be Held Sept. 9-14—And Booster Tour May Be Run Three Days Instead of Five**

MILWAUKEE, WIS., July 15—Milwaukee's annual fall show, conducted in conjunction with the Wisconsin State Fair, will be held this year as usual, according to announcement made by the Milwaukee Automobile Dealers' Association. The 1918 fair is scheduled for the week of Sept. 9 to 14. It is held at State Fair Park, in West Allis, a suburb of Milwaukee, where there is provision for a display of motor cars, trucks, tractors, supplies, etc., that is at least equal in extent to the annual Milwaukee show held in the Auditorium downtown.

Because of the increasing importance of the motor truck, the display of commercial vehicles, trailers, etc., will take a larger place in the annual fall show than formerly. The passenger car division, as usual, will introduce to the farmer-purchasers of motor cars every new idea advanced by the factories for 1919.

A decision will be made shortly by the M. A. D. with regard to holding the annual "booster tour" in August to arouse interest in the September show. Opinion is somewhat divided, but it is believed likely that a three-day tour, confined to the southeastern part of the state, will be conducted. Past tours have lasted five to six days and covered from 900 to 1100 miles of Wisconsin territory.

The Milwaukee association's adoption of the National association's war conservation program has released, it is estimated, from 200 to 250 men for direct war service, military or industrial. The program is working out splendidly throughout Wisconsin as well. At Madison, the state capital, 30 to 35 employees have been released. The motoring public has accepted curtailed service in an excellent spirit, and this co-operation has created a smooth-running organization throughout.

#### Coal Production Increases

WASHINGTON, July 13—The second highest weekly bituminous coal production in history is shown for the week ended June 29. Coal production for the week was 12,458,000 net tons as against 12,003,000 net tons during the week of June 22 and 11,583,000 net tons for the corresponding week of 1917. All coal districts except central Pennsylvania and Alabama showed increased shipments. Alabama decrease was 2.4 per cent and central Pennsylvania decrease was 1.8 per cent. Anthracite shipments increased 471 cars during the week ending June 29, the total movement amounting to 41,641 carloads.

Transportation showed a slight improvement during the week as did market conditions. There was a slight increase in the losses attributed to labor shortage.

During the week ended June 22 mines operated to 79.6 per cent of full time output. The percentages of full time lost are accounted for as follows: Car shortages 10.6; labor shortage including strikes 4.6; mine disability 3.2; no market 0.2, and all other causes 1.8.

#### More Room For Reliance

APPLETON, WIS., July 15—With the completion of its new motor truck manufacturing plant at Appleton, Wis., the Reliance Motor Truck Co., formerly of Racine, Wis., already is figuring on the erection of a second large unit, to be equipped as a rear axle plant, to handle the company's own requirements and commercial orders from the truck industry at large. The first building, completed this week and ready to start regular truck production by Aug. 1, is 85 x 300. The proposed axle shop will be 45 x 250.

#### First Marmon Liberty Engine Delivered

INDIANAPOLIS, IND., July 12—The first Liberty engine to be completed in the Nordyke & Marmon Co. plant ended its 50-hour trial run, 55 minutes after midnight Saturday and has been accepted by government officials. For most of the time the engine was on the block a normal speed of 1650 r.p.m. was maintained. The Nordyke & Marmon Company has already built and delivered 1000 Hall-Scott engines and completion of the order delayed production of the Liberty engines.

#### Rural Express in Michigan

LANSING, July 12—Preparations have been made for the operation of a Rural Express Route between Lansing and Grand Rapids.

Plans have been perfected by the traffic department of the Flint Board of Commerce whereby this city will become the center of a large transportation organization providing truck freight service for all of this section of the state. The first trucks to start out loaded in this new system left Detroit yesterday and will return with freight for Detroit to-morrow. Early next week, freight service will start between Flint, Saginaw, Bay City and Alma, and at the same time truck service will start between Flint and Owosso and Flint and Lansing.

Four trucking companies have been brought together in this new system, which will practically work as one unit, with an interchange of freight service, so that through shipments may be made from any point to another. The towns to be served include Ann Arbor and intermediate points between that city and Pontiac, where transfers will be made on the Detroit-Flint line; Holley, Fonton, Linden, Mt. Morris, Clio, Birch Run, Saginaw, Bridgeport, Frankenmuth, Bay City, Alma, Owosso, Corunna, Lansing, Fowlerville, Durand and other smaller places. Once the service is perfected it is expected that it will form a complete network over all of eastern, central and southern Michigan.

# Drive-Away Bureau

## To Peoria

PEORIA, ILL., July 12—Drive-aways twelve months in the year have been the program of the Pinkerton Motor Co., Dodge, Dort and Chevrolet dealer. When a car shortage first presented itself the Peoria concern immediately prepared to make cross-country drives from Detroit to Peoria. Thus far this season more than twenty-five trips have been made.

The itinerary of the Pinkerton drive-aways from Detroit to Peoria is as follows:

### Detroit to Toledo

This 68 miles of road is good with the exception of about 11 miles, which is very rough and bumpy. Most of this road is cement pavement.

### Toledo to Ft. Wayne via Defiance

Our men have gone from Toledo to Fort Wayne via Bryant but on this route there are 25 miles of deep clay, and we much prefer Defiance, which is a good gravel road.

### Ft. Wayne to Huntington, then on to Wabash, Peru and Logansport

These roads are good, mostly gravel.

### Logansport to Monticello

This is known as the "white post road," and the poles should be marked. This road is about as rough as you will find from Detroit to Peoria.

### Monticello to Kentland

A good road—partly gravel, some dirt.

### Kentland to El Paso

Straight road running parallel with T. P. & W. Mostly dirt and graded up nicely. Driving is excellent when road is dry.

### El Paso to 4 miles east of Washington, Ill.

Road is as bad as you will find anywhere in the route.

### 4 miles east of Washington into Peoria

Gravel road, which is passable any time of the year.

## Suggests Transit Cards

KANSAS CITY, July 12—G. W. Comp-ton, sales manager for the Paterson in Kansas City territory, who through much experience in drive-aways has discovered the activity of local officials in enforcing state automobile tax laws, has a suggestion to make.

It is that a uniform system of transit cards be established for which a nominal fee shall be paid, issued either by state or government authority, which may back up the transit car driver in his explanation of his position to local officials.

It has been suggested that the ideal arrangement would be for the government to provide for the issuance of such cards. The highway department, for instance, could appoint deputies in cities

where cars are manufactured, or any place else for that matter, who would be authorized to issue the transit cards. These cards would bear a government mark and so would stand a chance of recognition by local officials.

The transit tags might be issued at the license charge of \$1. Or a charge of \$5 might be made, \$4 of which would be refunded when the card is returned from the destination indicated when the license is deposited.

For instance, a distributor in getting a bunch of cars from Flint, Mich., and driving them through to Kansas City, would have license tags, issued by government agents, on the back end of each car; when he reached Kansas City all these cards would be returned to Flint. Under such an arrangement there would be no chance for the indiscriminate use of such cards. This would be particularly guarded against in case a time limit should be put upon the use of the cards.

It is pointed out that secretaries of state might issue such transit cards at a nominal fee, and they would answer practically the same purpose as regular license tags, which all tourists have.

The chief advantage of the transit cards issued by some authority is that they will be the obvious answer to the local officials who hold up the drivers.

## Baltimore Drives Trucks

BALTIMORE, July 13—Driveways into this territory for the past 10 days or more have been mainly with trucks. This is not due to the fact that the dealers will not drive, but because freight conditions have improved in some instances, and in others there are not sufficient cars to let any more come into the Baltimore territory, for the present at least. Owing to the lack of rain the roads have been very dusty, and many of the drivers have been forced to take it very easy along the National and Lincoln highways.

Seitz Auto Co. is driving Service trucks, while Ranier trucks and Velie cars are coming by freight. Zell Motor Car Co., Chalmers and Peerless distributor, is driving Peerless trucks and passenger cars. United Auto Sales Co., Studebaker and Garford distributor, is driving Studebakers from Philadelphia and Garfords from Lima. Five 3½-ton Garfords came in last Monday. Selden trucks are being driven in, and are also coming in over the freight route to the Auto Outing Co. Westcott Motor Sales Co., Westcott and Brockway distributor, is driving Brockways from Courtland, N. Y. Hummer Sales Co. is driving Lexingtons from Connersville, Ind., for both the Washington and Baltimore branches.

Chevrolet Motor Co. of New York is driving cars from New York City and from the factory.

## N. A. C. C. to Assist Government

DETROIT, July 12—Directors of the National Automobile Chamber of Commerce, at the regular meeting held in Detroit July 10, endorsed the efforts of the National Automobile Dealers' Association to help the government's war program by reducing the amount of unnecessary service on automobiles so that men may be released for war work.

W. E. Metzger, chairman of the Traffic Committee, reported an increasing number of driveaways. There was routine consideration of the reports on patents, roads, and motor trucks. It was brought out at the meeting that production of the latter has increased 100 per cent during the past six months because of the commercial demands for increased transportation facilities. The following committee chairmen were appointed by President Charles Clifton, who presided:

Patents, C. C. Hanch (Studebaker); Motor Truck, Windor T. White (White); Legislation, H. H. Rice (Chevrolet); Good Roads, Roy D. Chapin (Hudson); Traffic, William E. Metzger (Columbia); Electric Vehicles, W. C. Anderson (Detroit); Hand Book, Carl H. Pelton (Maxwell); Exports, J. Walter Drake (Hupmobile); War Service, Hugh Chalmers (Chalmers); Standardization, C. W. Churchill (Winton).

## Government Fixes Labor Rates and Rules

WASHINGTON, July 13—Three policies of importance in the employment of labor were established by the National War Labor Board yesterday. They were:

- 1—Approval of the 8-hr. day principle.
- 2—Insistence on payment of a living wage fixed at a 40-cent per-hr. minimum, for common labor.

- 3—Disapproval of the employment of children under 14 years of age.

These decisions were made at various factories where the Board was called upon to settle controversies between workers and employers.

Skilled workers were granted high increases as follows:

Toolmakers, 72 cents per hr.; machinists, first-class, 72 cents per hr.; machinists, second-class, 62 cents per hr.; specialists and handy-men, 52 cents per hr.; helpers, 46 cents per hr.

In the cases of a number of factories where common labor was receiving 22 cents to 30 cents per hr. and demanded 30 cents to 35 cents per hr., a minimum of 40 cents per hr. was awarded. It was also decided that the 8-hr. day plan should be maintained, that time-and-a-half for ordinary over time and double time for Sundays and holidays be granted, that employers meet committees of their own men in the various shops and that pay days be once a week on the company's time.

## Rubber Imports Show Big Increase in June

Nearly 8000 Tons More Come in  
Than During May—Half Year  
Figures Are High

NEW YORK, July 12—Imports of crude rubber took a big spurt during the month of June, an increase of 7836 tons being shown over the quantity which came in during May. During the first six months of 1918 the total amount imported was 99,468 tons. This is 11,387 tons more than was imported during the first six months of 1917.

The big increase shown during the month of June probably is due to a certain extent to anticipations of the action of the War Trade Board in limiting imports. The quantity which is to be allowed to come in during the period during May 6 and July 31 has been set at 25,000 tons, which will make an aggregate total of 100,000 tons for the entire year.

Although this total has now been reached, most of the rubber which has come in has been what was known as "free rubber," which is to say that it was shipped prior to May 8, when the restrictions on imports became effective. Following are the statistics as compiled by the Rubber Association of America:

Month	1917, tons	1918, tons
January	12,788	16,084
February	10,162	13,108
March	18,624	17,161
April	13,000	12,703
May	18,411	16,288
June	15,096	24,124
Total	88,081	99,468

### Brisk Western Truck Demand

DETROIT, July 12—Truck manufacturers in the Detroit territory report very brisk business on the East and West seaboard, but throughout the middle of the country in sections a lull in sales is manifest. Although there are scores of prospects in these sections and the desire to own trucks is present the sales are backward. A depressed condition seems to prevail. This condition, the manufacturers state, is only temporary, and all feel optimistic about it; many producers already see an easing up of the situation and note a slight increase of sales in some parts.

The city of Detroit is just coming out of such a lull. During June the truck business, it is reported by most retail agencies, has been at a standstill and none was able to determine the cause. Most of them lay it to the fact that solicitations for various war activities swerved money to other channels; others are of the opinion that this territory is over-supplied with trucks, while still others are satisfied with the thought that the depression is a natural one at this time of the year.

It is a fact that Detroit has an over-supply of dump trucks at this time. When the city was enjoying its building

boom some time ago a large number of individuals entered the building and contracting business and bought great numbers of this type of trucks. Now these vehicles are standing idle in many garages, only a few being converted into types suitable for regular truck service. It seems enough work cannot be found to keep all these idle trucks in use. One local contracting firm that owns over 100 trucks has an average of thirty to forty trucks idle every day and has found it necessary to advertise that it has vehicles for outside service.

The sales of many manufacturers show a decrease of 20 per cent in this territory. It is believed that the South will be the first section to come out of its state of depression; this due to the coming cotton crop. The east and west coast have been active because of the great quantities of material handled there; there is more moving in these sections.

### U. S. Carburetor Building

OMAHA, July 12—Ground has been broken for the first unit of the factory buildings to be occupied by the United States Carburetor Co. The company, which is capitalized at \$500,000, is manufacturing a kerosene carburetor, 15,000 of which already have been contracted for and the output of the factory—about 500 a day—has been sold for some time ahead. The factory will be located on the belt line facing Florence Boulevard. The first structure will be 125 ft. long by 125 ft. wide and will employ 200 men. The officers of the company are: President, Henry R. Gering; vice-president, A. C. Marshall; secretary, T. R. Murphy; treasurer, Henry T. Goos.

### Kansas Wants More Tractors

LAWRENCE, KAN., July 12—The demand for tractors is increasing in this territory. The main question here is one of delivery. The Smith Motor Co. has received a shipment of seven Fordsons that were sold before they left the factory, and the demand for this machine has been so great as to exhaust the allotment of the company in short order. Smith is arranging for demonstrations on some of the larger farms in the district. The dealers here are going to organize along the lines advocated by the War Industries Board and will live up to the letter the request of the board for conservation of labor and supplies.

### Grant Heads Kerosene Equipment

DETROIT, July 12—At a stockholders' meeting of the Kerosene Equipment Co. the following officers were elected: President, George D. Grant, president of the Marx Brass Works, Detroit, and director of the Grant Motor Co., Cleveland; vice-president, J. W. Racklycoft; secretary, R. J. Sherman; treasurer and general manager, E. E. Schwarzkopf. The officers, with Frederick C. Billings, president of Billings & Spencer, Hartford, Conn., make up the board of directors. The company has started production of its carburetors in its plant at 74 East Fort Street.

## Can Export Cars Now Without Paying 3% Tax

Attorney-General Holds It Is Un-  
constitutional to Put Tax on  
Exports from U. S.

NEW YORK, July 12—The Commissioner of Internal Revenue of the Treasury Department has ruled that manufacturers of motor cars can export cars without paying the 3 per cent war revenue tax which heretofore has been payable, and has virtually ruled that it is unconstitutional to tax any article which is exported from the United States.

The ruling is based on an opinion of the Attorney-General of the United States, which holds that the 3 per cent war revenue tax does not apply to articles sold in foreign commerce by any one of the four following methods:

- 1—Articles shipped by the manufacturer to an agent in a foreign country and sold there by the agent;
- 2—Articles shipped by the manufacturer to a foreign purchaser to fill orders received by an agent in a foreign country;
- 3—Articles shipped by a manufacturer to a foreign purchaser to fill orders received by the manufacturer in the United States;
- 4—Articles shipped by a manufacturer to a foreign purchaser to fill orders solicited by mail and received by mail from a foreign purchaser.

This ruling applies only to articles shipped from any city in the United States to a foreign country. The taxes apply, however, to articles sold in foreign countries by a manufacturer located in a territory or elsewhere in the United States other than in a state, and also to articles sold in commerce between the United States and any of its inland or other possessions except the West Indian Islands acquired from Denmark.

In explanation of the decision, which is supplemental to Regulations No. 44 approved May 31, 1918, it is pointed out that whereas Section 600 of the Act of Oct. 3, 1917, imposes a war revenue tax of 3 per cent on motor cars and other articles, Section 9 of Article 1 of the Constitution of the United States provides that "No tax or duty shall be laid on articles exported from any state."

The Treasury Department has issued in pamphlet form a revision and summary of its various rulings covering the 3 per cent war tax and referring particularly to Articles 1 to 10, inclusive.

### Two Lincoln Men Out

DETROIT, July 12—Rex Johnson, production manager, and Glenn Johnson, purchasing agent of the Lincoln Motors Co., have resigned. W. W. Goss, of the Condon-Carpenter Co., Providence, has been appointed in the place of Glenn Johnson.

### Red Heads for Post Office

NEW YORK, July 12.—The post office department in Washington has awarded the Emil Grossman Mfg. Co. a contract for Red Head Vitristonè spark plugs.

## Prominent Tradesmen Assume New Duties

### Resignations and Promotions Place Workers in New Places

H. S. Ketcham has been made sales zone manager for the Cleveland Tractor Co. in New England, with headquarters at Boston. He was formerly sales manager of the Manufacturer's Division of the Bradfield Co., Detroit.

J. H. Amory has succeeded A. G. Thomson, who has resigned from the Automobile Lubricants Sales Division of the Joseph Dixon Crucible Co., Jersey City.

Edgar H. Dowson, vice-president of the White Motors Co., New Haven, White and Buick distributor, has been appointed first lieutenant in the Quartermaster Corps. He is stationed at Camp Holabird, Baltimore, in command of the watertank division of a motor train.

Harry J. Warner, former vice-president of the Continental Motor Co., Detroit, has associated himself with the organization of the Federal Truck Co. He will act as vice-president in charge of production.

L. T. Miller, formerly assistant purchasing agent of the Detroit Steel Products Co., has been appointed purchasing agent for the Elgin Motor Car Corp., Chicago, succeeding F. X. Devlin, resigned.

W. T. Miller of the American Commercial Car Co. has been appointed manager of the new salesroom to be opened in Detroit this month.

J. B. Wyckoff, who is advertising manager for the Colt-Stratton Co., New York, Dodge Brothers distributor, has resigned. He has been appointed assistant business manager of *The Nations Business*, Washington, and takes up his new duties Aug. 1.

J. M. Griffin has been appointed sales manager of the Kerosene Equipment Co., Detroit. He was formerly with the General Electric Co., Schenectady, and later with Holley Bros., Detroit.

Fred Berger, formerly chief engineer of the Oakland Motor Co., Pontiac, and sales manager of the Muir Carburetor Co., and later chief engineer of the Abbott Motor Corp., Cleveland, has been appointed chief engineer of the Gray Motors Co.

Clem Jackson, who has been assistant chief engineer of the Haynes Automobile Co., Kokomo, Ind., and also of the Mitchell Motors Co., Racine, Wis., has been appointed chief engineer of the Erd Motor Co., Saginaw, Mich.

R. H. Patterson, for several years district representative for the Overland Co., St. Louis, has been made assistant to H. R. Henry, wholesale manager of the Overland Automobile Co., at St. Louis.

E. J. Brandt of the Velle Automobile Co., St. Louis, sales force, has been promoted to manager of the Used Car Dept.

E. B. Robinson has become service manager for the enlarged service department of the Howell Motor Co., Baltimore, distributor, Reo, D. E. and Duplex Drive Trucks.

Harry J. Warner, for 12 years with the Continental Motors Corp., Detroit, and for 6 years vice-president in charge of production, has been elected vice-president of the Federal Motor Truck Co., Detroit, member of the executive committee and board of directors with full charge of production.

George C. Whitman has joined the Oakland Motor Car Co., Portac, as a social service director. He will formulate plans for the betterment of working conditions among employees.

C. C. Secrist, formerly of the Baltimore Stewart Products Service Station, after a few weeks at Pittsburgh University Motor School, has become a sergeant for the U. S. A.

Robert A. Link, of the sales force of Schall-Crouch Auto Co., Baltimore, Paige and Attebury distributors, who was sent to service in the army at the Columbus Barracks, O., will be transferred to the motor section.

J. A. Scullin has been appointed manager of the Cleveland branch of the Mason Tire & Rubber Co.

J. E. Allen, for several years manager of the Chicago branch of the Braender Tire & Rubber Co., has been made sales manager. He will make his headquarters at the factory in Rutherford, N. J.

W. H. McKie, sales manager of the Jackson Automobile Co. of New England, has resigned to take a similar position with the Cramm-Bernstein Truck Co., Boston.

H. S. Mader, formerly in charge of the service at the Ford plant, Cambridge, Mass., has returned to Boston to act as manager of the Burnett & Sherman plant, Ford dealer.

### Campbell With Uncle Sam

BOSTON, July 15—Chester I. Campbell, secretary of the Boston Automobile Dealers' Association and manager of the Boston show, has been traveling with a government war exhibit in the West, but not all of his friends knew until recently that he has a real title. He is Director of the Bureau of Expositions, Division of Films, Committee on Public Information, of which George Creel is chairman. He is now on the Pacific Coast, but expects to be in the Middle West by September.

### 219,292 Passenger Cars in Michigan

LANSING, July 12—Michigan had 219,292 passenger cars July 1, according to figures given out by the automobile division of the state department. In addition, there were 23,420 commercial vehicles, 6505 motorcycles, 561 dealers' licenses, 19,420 chauffeurs and 5446 transfers to other owners during the first 6 mo. of the calendar year.

## Cassidy to Market a Fuel Economizer

### Distributor of Nationally Known Goods Adds Eccolene and Will Begin Active Sales Campaign

NEW YORK, July 15—The Edward A. Cassidy Co., which has built up a distributing business in several nationally known automotive products, has added a gasoline economizer.

The product is Eccolene, which is made by the Eccolene Co., Detroit, the latter company having among its principals F. Ed. Spooner, one of the trade's oldest publicity men, and Ralph De Palma, of racing fame.

In the gasoline economizer field there has been a conflict of ideas, relating to the basic features of the product, and from time to time the trade has enjoyed a few days' sensation at the newspaper announcement that a new product had been found which would wonderfully increase gasoline mileage and power. Many of these sensations proved to be exaggerations and there has arisen a belief that all economizers were faulty.

### Made of Seven Oils

Because of this belief the Cassidy company investigated for some months before entering this new field. Eccolene, it states, is made of seven oils and is added to gasoline in the ratio of one or two ounces of the product to five gallons of gasoline, depending on the size of the engine. The result is said to be that the gasoline is thoroughly broken up and all burned with no bad after effects. It is said to prevent carbon. Eccolene will sell for \$7 a gallon or \$2 a quart. It will be marketed through regular jobber-dealer channels.

The Cassidy company is the sales agent for Long horns, Rajah plugs, Kimball jacks, G. P. cut-outs, Corning Conaphores, Cassco tire pumps and Tenion rings and similar products.

## Motor Securities Quotations

	Bid	Asked		Bid	Asked
*Ajax Rubber Co.....	63	65	*Maxwell M. Co., Inc., 2nd pfd..	20½	21
*J. I. Case T. M. Co., pfd.....	80	85	Miller Rubber Co., com.....	103	105
Chalmers Motor Co., com.....	3	6	Miller Rubber Co., pfd.....	92	95
Chalmers Motor Co., pfd.....	20	30	Packard Motor Car Co., com.....	118	125
*Chandler Motor Co.....	80	81	Packard Motor Car Co., pfd.....	93	96
Chevrolet Motor Co.....	132	135	Paige-Detroit Motor Car Co.....	18	20
Fisher Body Corp., com.....	38	39	Peerless Truck & Motor Corp....	13	17
*Fisher Body Corp., pfd.....	89	90	Portage Rubber Co., com.....	102	105
Fisk Rubber Co., com.....	55	58	Regal Motor Car Co., pfd.....	..	..
Fisk Rubber Co., 1st pfd.....	98	103	*Reo Motor Car Co.....	13½	15
Fisk Rubber Co., 2nd pfd.....	79	83	*Saxon Motor Car Corp.....	7	8½
Firestone Tire & Rub. Co., com..	98	101	Springfield Body Corp., com....	..	..
Firestone Tire & Rub. Co., pfd..	93	95	Springfield Body Corp., pfd....	..	..
*General Motors Co., com.....	152	155	Standard Motor Construction Co.	12	14
*General Motors Co., pfd.....	81	82	*Stewart-Warner Speed. Corp..	59½	60½
*B. F. Goodrich Co., com.....	45	45½	*Studebaker Corp., com.....	45	45½
*B. F. Goodrich Co., pfd.....	97½	98½	*Studebaker Corp., pfd.....	84	90
Goodyear Tire & Rub. Co., com..	160	165	Swinehart Tire & Rubber Co....	55	62
Goodyear Tire & Rub. Co., pfd..	96¼	97½	United Motors Corp.....	32½	33½
Grant Motor Car Corp.....	2½	3	*U. S. Rubber Co., com.....	60¼	60½
Hupp Motor Car Corp., com.....	2½	3½	*U. S. Rubber Co., pfd.....	105	106½
Hupp Motor Car Corp., pfd.....	78	81	*White Motor Co.....	41	42
International Motor Co., com....	25	35	*Willys-Overland Co., com.....	19¼	19½
International Motor Co., 1st pfd.	55	60	*Willys-Overland Co., pfd.....	81½	83
International Motor Co., 2nd pfd.	35	43	Standard Parts Co.....	62	65
*Kelly-Springfield Tire Co., com.	50½	51			
*Kelly-Springfield T. Co., 1st pfd	82	87			
*Lee Rubber & Tire Corp.....	18¼	19			
*Maxwell Motor Co., Inc., com....	28	28½			
*Maxwell M. Co., Inc., 1st pfd..	54½	55			

\*At close July 13. Listed N. Y. Stock Exchange.

†Par value \$10.



## Los Angeles Garages Short of Mechanics

### Labor Situation Becoming Critical —Competition for Help Worst Feature

LOS ANGELES, July 12—The labor situation at garage and dealer establishments has become critical, and to date no remedy has been devised. Mechanics who a year ago were paid 40 cents an hour are now getting from 55 to 65 cents. Several months ago there was a rush of mechanics to the shipyards, lured by the high wages, but a recent change, whereby the shipyards are working three 8-hour shifts and overtime has been eliminated has been followed by the return of many of these mechanics to their former trade.

Competition is being encountered here not only from the various garage owners and dealers but from outside sources as well. One dealer recently protested against the practice of "stealing" mechanics by offering more money, and his complaint met with approval, but there has been no discontinuance to the practice. The result has been that inefficient mechanics have profited as much as those more skilled in getting higher wages. An attempt to unionize this class of employees, however, did not meet success.

Representatives of Tacoma dealers came to Los Angeles recently, and by offering a wage of 83 cents an hour and transportation succeeded in coaxing several of the most experienced mechanics to leave here for the northern city. Business here has not been as good as in the Northwest, and employers could not compete against such wages. Some dealers have advanced their shop charges from \$1 an hour to \$1.25 to compensate for the increased expense.

### New York Deliveries By Rail

ROCHESTER, July 12—Although at present the railroad situation is such that practically all Rochester motor car distributors are getting their cars direct from the factory by rail or by driving them to this city after they have been delivered at Buffalo by boat, this situation is not expected to continue a great while. Practically every Rochester distributor is making plans for large fall and winter drive-aways.

George Clark, sales manager for the Thomas J. Northway Co., Reo and Maxwell distributor, is confident that as soon as the grain from the western fields begins to move eastward an embargo will be placed upon all passenger cars, and that then the factory drive-away will again loom important.

A large number of cars were driven over the Toledo-Cleveland-Buffalo route by the Northway people during the past winter and spring, and all cars came through without a scratch or a traffic arrest due to reckless driving. The credit for this good record is given to one of

the Northway employees, who accompanied every shipment and became highly efficient in the handling of the men and cars while on the road.

Reo cars are arriving in Rochester in a rather peculiar manner. The Reo company has made a contract for carrying cars with the Arms-Palace Horse Car Co. They are shipped from the factory to Lockport, N. Y., in horse cars, and there unloaded and taken away by the distributors. The Arms Palace company has a contract with a Lockport firm for the transportation of war material from Lockport to Detroit, and is thus enabled to make the trip loaded both ways. Of the dozens of Reo distributors who are driving their cars from the unloading station at Lockport, but few have failed to notice and remark upon the irony of the motor cars being delivered in the cars built to carry the animal which they have practically displaced.

### Fort Dodge Adopts War Service

FORT DODGE, IOWA, July 5—The automobile dealers of this city have taken up the conservation suggestions of the National Automobile Dealers' Association. They will close their service stations nights, Sundays and holidays, and the garages will co-operate with them, with the exception that the garages will remain open Saturday nights in order that customers may stock up for Sunday. It is believed the association will adopt the Cash Basis also. An organization meeting for membership in the National Automobile Dealers' Association is planned some time this month. The association here recently was addressed by President Deane Schooler, of the Des Moines Association. In order to see that the war conservation measures are carried out, a committee was appointed, consisting of A. R. Hoenk, Guy Rankin, A. C. Boggs, L. W. Wheeler and George Tremain. These men will make a canvass and report those who fail to live up to the suggestions.

## Reclassify Freights Changing Many Rates

### Under Consolidated Classification Car Rates Increase and Trucks Decrease

NEW YORK, July 12—Under the Consolidated Freight Classification, which is now in print and ready for filing before the Interstate Commerce Commission, freight rates for passenger cars will be increased 10 per cent on Western railroads, and rates on trucks reduced.

Heretofore, passenger cars and trucks have been placed in the same classification by railroads and have paid the same rates. Under the Consolidated Classification these are separated, and whereas trucks heretofore have been rated double first-class rates in l.c.l. lots, and first-class rates with a minimum of 10,000 lb. in c.l. lots, under the Consolidated Classification rates charged will be 1½ times first-class rates l.c.l., and for c.l. second-class with a minimum of 12,000 lb. for a 36-ft. car.

If the Consolidated Classification becomes effective, rates on passenger cars will be the same as those at present prescribed in the Official Classification on l.c.l. shipments. This is 2½ times first class at actual weight, with minimum charge on 5000 lb. each at first-class rate; double first-class rate when crated, and 1½ times first-class rate when boxed. Rates for c.l. shipments are increased to 110 per cent of first class, with a minimum of 10,000 lb. This represents an increase of about 10 per cent.

A further change proposed by the Consolidated Classification would permit the mixing of various articles at carload rate. When this is done the carload will be rated at the highest rate of any commodity in it, with the carload minimum rate the highest provided for any article in the carload.

## Quantity of Paint Required

TO determine the quantity of paint required to cover a given area measure the length and width of the building and obtain the perimeter or number of feet around the building. Multiply this by the average height and the product will be the number of square feet to be painted.

A good paint should cover 300 sq. ft. of surface, two coats, per gallon of paint. Divide the number of square feet to be painted by 300 and the result will be the number of gallons that will be necessary to cover the ordinary surface. A very porous, rough or scaly surface will naturally take up more paint. If three coat work is desired, half again as much paint will be needed.

Don't forget to employ a good painter. Any paint must be well brushed out and a lazy workman will spoil an otherwise perfect job by neglecting to spread the paint properly.

Don't overlook the necessity of shel-lacing all knots, sappy or pitchy spots before applying the first coat.

Don't paint a damp or green surface as no paint will adhere properly under such circumstances.

Don't forget that yellow pine is very hard to paint and must be well seasoned if success would attend your efforts.

Don't use ochres of any description for priming. Use the same paint that is to be used for finishing coats, thinning it, however, according to the directions accompanying each can.

Don't try to paint over a surface which has scaled or blistered without wire brushing or burning off the old paint.

Don't forget that the better the paint the better the job, and the more satisfaction and service will be produced. That's what you are looking for. Two thin coats are better than one thin one.

## "Work or Fight" Order Hits Coast Salesmen

### Exemption Boards Do Not Consider Motor Cars or Salesmen Essential—Protests Filed

LOS ANGELES, July 12—The "work or fight" order, as applied to vocational employment, has resulted almost in the disruption of some of the sales organizations of dealers and distributors. Each individual case is being decided upon its merits by the local exemption boards, and from results to date the motor car salesman is not looked upon as deserving of exception to the order.

P. H. Greer, president of the motor car dealers' association, interviewed the chairman of the Los Angeles exemption board in behalf of the dealers, and was told that Washington has not seen fit to classify motor car salesmen as essential. Some boards appear quite lenient, and have told salesmen who were notified to appear before them to continue their present employments unless called again. Other boards, with an apparent desire to make a record for the number of men ordered into essential lines, are refusing absolutely to recognize the motor car salesman as an essential.

In one instance reported, the board told a salesman the automobile was not on the preferred list, so it could not rule salesmen as necessary. Another salesman who was barred from military service by physical impairment, and who has had an application for work at the shipyards on file for weeks, was told that if the shipyards did not put him on in 10 days he would have to look elsewhere for war-time employment.

### Government Controls Sulphur

WASHINGTON, July 12—The War Industries Board has taken over control of production and distribution of sulphur materials, and W. G. Woolfolk has been made chief of the section in charge of sulphur and pyrites. Sulphuric acid is used to a certain extent in the automotive industries for pickling baths, but it is not anticipated that there will be any difficulty in obtaining this material. Sulphur is an indispensable article in the vulcanization of rubber, about one-fifth of the weight of crude rubber being required. It is understood that the rubber industry, which is looked upon as an essential industry by the War Industries Board, will be protected in its requirements.

### New Rainier 3000-lb. Truck

NEW YORK, July 12.—The Rainier Motor Corp., Flushing, will soon begin shipping a new model 3000-lb. capacity truck which is to be styled model R-6 and will sell in chassis form for \$1,790. It will be equipped with a four-cylinder  $3\frac{1}{2} \times 5\frac{1}{2}$  Continental, governed engine, Brown-Lipe clutch and gearset and worm drive axle. The wheelbase is 133 in. and

the tire equipment 34 x 4 front and rear Firestone solid pressed-on type. With this addition the line now includes models having capacities of 1000, 2500 and 3000 lbs., all worm drive.

### La Crosse Developing Line of Machinery

LA CROSSE, WIS., July 5—A line of farm machinery specially designed for use with the Happy Farmer tractor so that one man can operate the tractor as well as the machinery is being developed. The line will consist of gang plow, disk harrow and power-lift seed drill. The control levers on these pieces of machinery will be such that they can be operated by the tractor driver, thus making the machinery a one-man outfit. The La Crosse Tractor Co. is working on a production schedule of 4000 tractors this year.

### Rural Express for Iowa

DES MOINES, July 8—Iowa is getting ready for the Rural Motor Express. In spite of the famous, or infamous, whichever you choose to call them, dirt roads a number of agencies in the Hawkeye state are taking steps which promise within a few months to have the movement for rural express well on its way.

Some time about a month ago the first definite step for motor truck delivery was taken at Council Bluffs where a company was incorporated to carry on a trucking business.

During the past week the sentiment in Des Moines has been crystallized by two trial runs to nearby county seat towns. Dean Schooler, president of the Des Moines Automobile Dealers' Association, and Harter B. Hull, president of the Des Moines Motor Truck Association are taking the lead in the movement here. They are receiving the most hearty co-operation of the state council of defense which is taking a direct interest in the project.

The International Harvester Co. has sent A. B. Hancock to Des Moines to co-operate with the Des Moines men. The trial runs were held under Hancock's supervision. A fleet of five trucks carrying 16,500 lb. made the run to Indianola, 18 miles, in 1 hr. and 45 minutes. The return trip, empty, was made in 1 hr. 30 min. The expense of the trip amounted to 10½ cents for each 100 lb. of freight. The actual saving in expenses over freight and drayage at both ends was figured at \$23.41.

To show that the agitation here for rural express is more than mere talk one Des Moines dealer sold freighting service at once between Des Moines and a town about twenty miles distant.

### General Motors to Build Bodies in St. Louis

ST. LOUIS, July 12.—The General Motors Corp. has purchased a plot of ground amounting to 105 acres here and it is stated will build a considerable number of its bodies in a plant to be erected.

## Shop Men Not Hit By "Work or Fight" Order

### Crowder Rules That Boards That Have So Acted Have Done So Without Authority

WASHINGTON, July 12—Automobile repairmen in garages and repairshops do not come under the "work or fight" order recently promulgated by Provost Marshal General Crowder. This ruling was made to-day by the office of the Provost Marshal here and is definite.

It does not matter whether the repairmen are working on trucks or passenger cars. According to the office of the Provost Marshal those local draft boards which are reclassifying repairmen under the "work or fight" order are acting without proper authority. Repairmen reclassified by their local boards can appeal these cases.

### Tracy to Conduct Official Fuel Consumption Tests

NEW YORK, July 12—Joseph Tracy, consulting engineer, has been appointed consulting engineer of the Bureau of Oil Conservation, United States Fuel Administration, by W. Champlin Robinson, who is Director of Oil Conservation. Tracy will conduct sanctioned tests of automobiles, motor trucks and other apparatus for the purpose of securing greater fuel economy. These tests will be sanctioned by the Bureau of Oil Conservation. This practical testing work is being concentrated under the complete direction of Mr. Tracy. The definite plans as to the exact nature of road tests have not been decided upon.

### Ford Will Reduce Production

DETROIT, July 12—Indications point to a sharp cut in the production of passenger cars and trucks by the Ford Motor Co. It is expected that the output of the factory will be brought down to 375 passenger cars and 450 trucks a day by Aug. 1. This is necessary because of the immense amount of government work handled at the Ford factory. It is reported that the government has suggested this action. The company is now turning out 1000 cars daily as compared with 1600 less than 30 days ago. This last figure represents only 50 per cent of its greatest normal production.

### United Service Grows

NEW YORK, July 12.—On July 1 the United Motors Service, Inc., which operates six branches in as many prominent cities and 15 service stations in as many other cities took over all of the field service work of the manufacturers of Delco, Remy and Klaxon electrical equipment. General offices of the company have just been moved into larger quarters at 782 Woodward Avenue, Detroit.

# Steel Situation Not So Tense as It Has Been

New Rules Indicate That There May Be Steel for Even Those Cars That Are Not Sold for Strictly Business Uses

## New Steel Arrangements

*Classification of steel consumers allows shipments to certain consumers without priority certificates or written approval from War Industries Board.*

*Jobbers in steel and steel products will be allowed to maintain and replenish stocks.*

*Consumers ordering not more*

*than 5 tons of steel in the aggregate will secure delivery regardless of their classification.*

*Exports of steel and iron products will be supervised by War Industries Board. The steel and iron will not be shipped to the manufacturers for construction for export except by written approval.*

WASHINGTON, July 12—Shipments of steel and pig iron can now be made to certain consumers without priority certificates or written approval from the War Industries Board under a new classification plan just arranged.

The trend of the new scheme inaugurated by the board marks a relaxation from the strict steel control it has supervised in the last 60 days. It appears that the forecasts made by the steel industry that the War Industries Board would learn that the Government does not require the entire steel output for war work are true. Apparently steel production is greatly in excess of governmental steel requirements.

There are five classifications of consumers, including, according to unofficial version:

Class AA, A and B—Ships, including destroyers and submarine chasers; aircraft; munitions; fuel for military, naval and domestic consumption and for war factories.

Class C—Railroads and other necessary transportation equipment; public utilities serving war industries, army, navy and the civilian population; clothing for civilian population; fuel for food, clothing and like industries; tools, implements, utensils and equipment required directly or indirectly for food production, completion and preservation.

Class D—All industries and products not included in the above.

Making public the classification scheme, the board declined the request of Motor World to outline either the above classifications or the positions of automotive products as told below, officially, but in interviews indicated that these classifications and positions would be approximately correct.

The positions of the automotive products under the new classification will be:

Classes AA, A and B—Airships, passenger cars for war purposes; trucks for war purposes; motorcycles for war purposes; military tractors.

Class C—Farm tractors; commercial trucks; passenger cars partly finished and requiring only a minimum of parts for completion; passenger car factories performing considerable war work where it is desirable to maintain that part of the organization making passenger cars; motorcycles.

Class D—Passenger cars not strictly for utilitarian purposes or not specified in the above classifications.

Priority certificates will be issued by the director of steel supply, War Industries Board, to classes AA, A and B, indicating that these are of the utmost importance and will receive first consideration.

Producers of steel and pig iron may ship these commodities to class C consumers without priority certificates or written approval. They are allowed by the War Industries Board's instructions to ship to class C consumers not only after priority certificates are filled, but at any time such deliveries do not interfere with the filling of priority certificates. It is anticipated that this arrangement will insure adequate steel supply to all class C consumers.

Orders not exceeding 5 tons in the aggregate for class D consumers can be filled by producers without written approval from the board provided these shipments are reported monthly with a statement that the orders were filled in the public interest. Orders from class D consumers for more than 5 tons must first be approved by the War Industries Board.

### Procedure for Manufacturers

The surest plan for all manufacturers to pursue, if not in classes AA, A or B, is to assume that they are in class C and apply for their full steel and pig iron requirements from the producers on that basis. If they are unable to secure their needs through this plan or cannot find a producer or manufacturer who will accept the order, application for allotment

should be made to the Director of Steel Supply and should be supported by strong evidence in writing that the public interest requires that such orders be placed and filled.

Purchasers of steel under class C rating should not apply to the War Industries Board so long as reasonably satisfactory delivery is secured. They should apply for their requirements only to the steel producers. Class D consumers should apply only to the producers and manufacturers of steel and pig iron, who will in turn, when the orders amount to more than 5 tons, mail such applications in duplicate to the War Industries Board for approval.

Discussing the classification of passenger cars it was said that all such applications for steel or pig iron when not in class C or higher will be considered on their respective merits. The extent of loss, the quantity of steel needed and the conversion possibilities of the factory will be taken into consideration.

According to some officials of the War Industries Board a plan is now under consideration whereby steel will be supplied to all passenger car manufacturers under a license plan under which they will be allowed to make and sell passenger cars for solely utilitarian purposes. The plan is at this time very vague in the minds of those conceiving it.

They are considering some method by which the consumer would supply a certificate testifying to the uses planned for the car he desires to purchase. If some such plan can be successfully operated it is expected that the manufacture of the great bulk of passenger cars, which goes to the farmers, doctors, contractors and other businesses and professions, will be continued.

### Requirements for Jobbers

Jobbers of farm tractors and similar commodities will be allowed to maintain and replenish their stocks, but must observe the essential minimum in placing orders. They must sign a pledge to prevent hoarding, and to sell their stocks only for essential uses. They must exact similar pledges from their customers. By meeting these conditions they will be assured prompt shipments by the makers and will be given priority ratings by the War Industries Board.

The jobbers dealing in plates, sheets, bars and shapes, structural shapes, farm implements, tubular products, wire and wire products, tin plates, heavy hardware, farm implements, mining tools, machinery and equipments, oil well supplies and similar products will operate under the following plan in the maintenance of their stocks:

Each jobber will file before the 5th of each month with the Director of Steel Supply, War Industries Board, a certified statement covering shipments made during the preceding month. Forms will be furnished for the statements by the War Industries Board.

To the extent that such shipments fall within classes AA, A, B or C as defined above or by permits issued by the director of steel supply, the jobber will be entitled to rank with the manufacturer and

secure priorities for the replacement of shipments so made, provided that the total tonnage ordered for replacement will not be in excess of the amount that was shipped during the previous month.

Manufacturers will be expected to scrutinize all orders from jobbers to guard against hoarding.

#### Must File Pledge

All orders placed in accord with the above rules will be rated as class B-4 and entitled to class B priority and precedence, providing the jobber placing the order has filed with the priorities committee and the Director of Steel Supply, War Industries Board, a pledge in writing as follows:

"I do hereby pledge myself not to use or so far as lies within my power permit the use of any stocks now in or which may hereafter come into my possession or control, save

"(1) For essential uses as that term may be defined from time to time by the Priorities Division of the War Industries Board, or

"(2) Under permits in writing signed by the Director of Steel Supply; that I will make no sale or delivery from such stocks to any customer or retailer before his filing with me a similar pledge in writing; and that I will use my utmost endeavor to prevent the hoarding of stocks and to insure that they be distributed solely for essential uses."

When this pledge has been once filed the jobber should certify this fact on each order when placed with the manufacturer. Manufacturers will not accept orders without such certification.

No applications for licenses to export iron or iron and steel products should be made of the War Trade Board (except on direct orders of the U. S. Government and its allies) unless the orders are (1) covered by priorities certificates classes AA, A or B, or (2) covered by a permit signed by the Director of Steel Supply. This ruling does not indicate that the Steel Division of the War Industries Board has usurped the duties of the War Trade Board and will control all exports. It does mean that wherever an article or commodity which would ordinarily fall in class C for consumption in this country, such article or commodity will fall into class B if manufactured for export and the manufacturer will lose his preferential class C rights. Before he secures the steel for manufacture of an article of iron or of iron and steel for export, he must secure a permit from the Director of Steel Supply just as if he were in class B.

#### Marmon and Hall Going to France

DETROIT, July 12—Major Howard Marmon, Colonel Hall and Charles H. Willard, chief engineer of the Aeromarine Plane & Motor Co., will form a Government commission to obtain the latest military information on aircraft. They will leave shortly for France and England.

## Again, No Gasoline Shortage at Present

### Director of Oil Conservation Says There Is Plenty but We Must Not Waste

WASHINGTON, July 9—*There is no shortage of gasoline. Supplies are ample to take care of our war and normal requirements if we will practise sane conservation in this country.*

These statements were made to-day by W. Champlin Robinson, Director of Oil Conservation, United States Fuel Administration. The demand for gasoline for airplanes and trucks with the American Expeditionary Forces is constantly growing, and will necessitate continually increasing shipments overseas.

The present stocks are now ample to supply the war needs and allow the normal rational consumption to continue.

But waste of gasoline must cease, stated Robinson, in order that we may be able to continue normal rational consumption in this country and amply meet our war requirements.

There is no suggestion of enforced curtailment of gasoline or lubricating oils in the minds of the Fuel Administration.

*There is no suggestion of limiting the use of passenger cars, despite newspaper reports to the contrary.*

There is a decided opposition by the Fuel Administration, however, to the careless, wasteful handling of gasoline as exists at present in this country, and the Fuel Administration warns that unless the waste is eliminated, possible restrictions may have to be inaugurated to insure sufficient gasoline and oil for our war needs.

The Fuel Administration will shortly issue a poster to every garage and distributor of oil and gasoline pointing out 5 important methods of preventing waste. The posters will urge:

1—That the use of gasoline for cleaning parts be abolished.

2—That all leaks in gasoline lines on passenger cars, gasoline tanks, gasoline tank houses and nozzles, etc., be stopped.

3—That careless handling of the gasoline tanks and hoses, creating unnecessary waste through spilling, be stopped.

4—That the tops of gasoline tanks be kept tight.

5—That motorists shut off their engines when not driving the cars.

#### New York Closing Saturday Afternoons

NEW YORK, July 13—Following the affiliation of the Automobile Dealers' Association of New York City with the National Automobile Dealers' Association, the dealers here have voted to close their establishments at 1 o'clock Saturdays, beginning to-day. The service stations generally have been closed Saturday afternoons, the shops working 48 hours a week on a plan which made a half holiday possible. Following the meeting July 1, at which the New York dealers

joined the N. A. D. A., eight new members have been received, the local membership now including practically the entire row.

#### Overland Prices Advanced

DETROIT, July 10—The Willys-Overland, Toledo, has advanced the prices of all its models, effective July 16, as follows:

Model	Old Price	New Price
T, touring	\$350	\$395
roadster	850	895
90, country club	875	925
sedan	1340	1385
panel delivery	865	895
express delivery	840	875
85-4 touring	965	1025
roadster	965	1025
1200-lb. delivery	975	1075
85-6 touring	1195	1300
roadster	1195	1300
85-6 coupe	1420	1550
sedan	1620	1720
89 touring	1450	1525
club roadster	1450	1525
88-4 touring	1625	1650
coupe*	2275	2600
sedan*	2325	2650
limousine*	2425	2750
88-8 touring†	2100	2500
limousine†	2900	3300
coupe†	2770	3175
sedan†	2800	3200

\*Include 5-inch cord tires.

†Include 5-wire wheels and 5-inch cord tires.

#### White Resigns Transport Service

WASHINGTON, July 12—Walter T. White, recently appointed as chief of operations and maintenance of the motorized mechanical repair depots in this country under the Motor Transport Service, has resigned. George Randles, who was in charge of this work under Christian Girl in the original Motor Transport Section of the Quartermaster Corps, has been appointed to succeed White. Guy Morgan, formerly president of the Abbott Motor Corp., who was in charge of the spare parts, tires and accessories for the original Motor Transport Section, has been appointed to similar duties under Colonel Glover in the new Motor Transport Service.

#### New England Service for Prest-O-Lite

BOSTON, July 13—The Automotive Battery Corp. has been formed here to take over the service of Prest-O-Lite products in Boston and vicinity. James MacKenzie is president and general manager. He was formerly in charge of the Willard battery interests at Springfield, Mass., and later purchasing agent at the Watertown Arsenal. George Bradburn, of the Bradburn Motors Co., is treasurer. The company has leased quarters at 701-703 Beacon Street, and it has plants at Cambridge and Springfield. J. A. O'Donnell, manager of the Prest-O-Lite branch, retains his position as representative of the factory in New England.

#### To Sell Hexal on Coast

PHILADELPHIA, July 12.—The Sedgley French Co. has completed arrangements with McDonald & Linforth, San Francisco, to handle the distribution of Hexal wrenches on the Pacific Coast. Midwestern sales are handled by the Gray-Heath Co., Chicago.



# Getting in the Entering Wedge of Return Loads Bureaus

## Kansas City Distributer Starts One by Way of Educating the Public to Its Benefits

KANSAS CITY, July 12—A Return Loads Bureau has been established in Kansas City for territory within 75 miles by A. S. Austin, manager of local sales of the Republic. The project was instituted July 1 at a meeting of thirty truck owners called by Austin. Business placed by the bureau has averaged \$150 a day since, though it is realized that this level may not be maintained.

H. M. Genung, manager of the H. A. Dougherty Motor Co., distributors of Republic trucks, and Austin had tried in vain to discover local facilities for local and outside truck owners who had work over the country roads.

Rather in desperation, in order that this subject might not be neglected in Kansas City and that the industry might have the benefit here of a Return Loads Bureau, they decided to establish a bureau on their own hook.

Their purpose was to try out the idea and make the offering of the preliminary studies and work for the general good. Naturally, they got their first information from Republic owners of the territory through agents, securing a considerable list of names as the nucleus of their truck business exchange.

P. Gibbons, for several years with the Auto Truck Transfer Co., Kansas City, and previously with another transfer company, was employed to manage the bureau. Offices were provided in the Republic establishment at Seventeenth and McGee Streets. Gibbons prepared data on the available routes out of Kansas City to towns where business might originate or to which much Kansas City wholesale business went. He interviewed many wholesalers and manufacturers and discovered that they would welcome the development of truck transport service.

From truck owners he learned that they would give the use of their trucks at the rate of \$1 a mile when two or three men were needed to handle furniture and similar objects and that most of them would hire out their trucks with drivers at \$2 an hour.

On the basis of \$2 an hour, his display to the truck owners showed that trips to towns as far as 40 miles from Kansas City could be made profitably at the new freight rate, with a small extra charge to correspond to cartage, and if a return load were secured, such would be velvet.

For instance, Buckner, Mo., on a rock road, 22 miles from Kansas City, has had a freight rate of 33c. on groceries. The new freight rate on these commodities to Buckner is 415c. Adding a charge of 10c. per 100 lb., which corresponds to cartage, gives a charge of \$20.60 on a 2-ton load. At a maximum estimate of 6 hours to make the round trip—with a

load only one way—the truck owner would receive \$8.60 beyond his normal charge of \$2 an hour.

Similar estimates were made on a longer haul, to Lexington, Mo., over a dirt road. The distance is 42 miles; the old freight rate 39c., the new rate 49c. per 100 lb. Adding the cartage charge of 10c. per hundred, the revenue for a 2-ton truck one way would be \$23.60, and a very moderate return load would provide abundant net returns to the owner.

The "Truck Service and Return Load Bureau," as it is called, is starting on a practical basis of providing work for truck owners. There are now thirty-five truck owners listed, practically all of them in Kansas City. These include the large transfer companies and, because of demand for that service, one or two comparatively small trucks with express bodies.

Publicity will be given the service, through newspapers and otherwise, to inform the public that they can secure truck service through this bureau, whether the service desired is within the city or to outside points. Truck owners are being classified as to their specialties, furniture carriers, handlers of structural steel, live stock, etc.

The chief obstacle to the development and organization of Return Loads Bureaus in this territory has been the lack of information on the use of trucks on highways, and the trouble getting a definite idea on how to start. It is hoped that the bureau established by private enterprise will prove a stimulus and that through the machinery of the Intercommunity League of chambers of commerce of the three States a rapid development of the use of trucks may be brought about.

### MacAlman First Dealer in Aeroplanes

BOSTON, July 13—President John H. MacAlman, of the Boston Automobile Dealers' Association, noting that some dealer elsewhere than in New England is claiming credit for being the pioneer dealer in airplanes, presents facts to establish his claim to be about the first automobile man to take them on.

In 1909, or nearly 10 years ago, MacAlman advertised airplanes for sale in connection with his business, and he had a machine in his service station. In the 1910 automobile show at Boston he exhibited one above the space where he had his cars, and it attracted much attention.

For some three years he was an agent for the Burgess machine, as he believed that the new method was coming along fast. He spent \$500 in advertising the

Curtiss machine so that he might have the agency for that line, and the conditions of the contract to get it had a mandatory clause making the expenditure of \$500 a requisite.

During his agency MacAlman really sold two machines. They were used for exhibition purposes. MacAlman spent much time visiting the Burgess plant at Marblehead, and he was getting some prospects interested in the machines until he gave it up. But he believes that he is the original motor-airplane dealer who really sold machines, exhibited them at a motor show and advertised them in the newspapers.

Harry Fosdick had a charter to make, deal in and exhibit airplanes when he formed his automotive company here, and is believed to be the first dealer to use the name "automotive" in a firm name. The New England Oakland company has a charter allowing it to deal in airplanes in addition to motor cars, which it secured a few years ago.

### Durant Wins Liberty Sweepstakes

TACOMA, WASH., July 12—R. C. Durant, in a Chevrolet, was the winner of both the 25-mile and 50-mile races in the Liberty Sweepstakes held here. Eddie Hearne, in a Duesenberg, took first place in the 75-mile event, being followed closely by Durant. A crowd of 45,000, which attended, was enthusiastic over the driving of Durant, Lewis and Hearne, but disappointed in its old-time favorite, Earl Cooper. The time schedules follow:

#### LIBERTY SWEEPSTAKES

##### 25-Mile Race

Driver and Car	Time
R. C. Durant, Chevrolet.....	15:09
Dave Lewis, Duesenberg.....	15:28
Eddie Hearne, Duesenberg.....	15:30
Eddie Pullen, Mercer.....	15:32
Earl Cooper, Stutz.....	17:43

##### 50-Mile Race

Driver and Car	Time
R. C. Durant, Chevrolet.....	30:37 1/2
Eddie Hearne, Duesenberg.....	31:38 1/2
Dave Lewis, Duesenberg.....	31:38 1/2
Earl Cooper, Stutz.....	31:41

##### 75-Mile Race

Driver and Car	Time
Eddie Hearne, Duesenberg.....	47:43 1/2
R. C. Durant, Chevrolet.....	47:58
Earl Cooper, Stutz.....	48:50
Eddie Pullen, Mercer.....	49:30

### Boston Dealers Double Up

BOSTON, July 13—Another conservation of overhead expenses on the part of Boston dealers was announced when the Hinchliffe Motor Car Co., Jordan dealer, moved this week from a big building on Commonwealth Avenue to share half the salesrooms and service department of the J. W. Bowman Co., that handles the Daniels Eight. The Bowman company is on Massachusetts Avenue, and it is directly across the street from the salesrooms where the Jordan was first introduced to Boston by Hinchliffe.

# MOTOR WORLD GUIDE

Specifications  
of the  
Leading Cars

Revisions Are  
Made in Table  
Every Week

Model	Motor	S. A. E.	Ignition	Carburetor	Starting	Clutch	Gearset	Wheelbase	Trim	Rims	2- Passenger	5- Passenger	7- Passenger	Coupe	Sedan	Limousine	Detachable Top
ABBOTT 6-62	6-31x5 29.4 Remy		Stumg	Remy	DD	3	122	34x4 SS			\$1595		\$1595	\$2150	\$2150		
ALLEN Series 41	4-31x5 22.5 Conn		Stumg	A-Lite	D	3	112	32x4 SS			11145	\$1095			1395		
AMERICAN B	6-31x5 23.4 G & D		Zenith	G & D	DD	3	122	32x4 SS			1645	1595	1695				
ANDERSON 20	6-31x4 25.3 Conn		Zenith	Waths	DD	3	120	33x4 SS			**1465				2165		
400-F	6-31x5 29.4 Delco		Stumg	Waths	DD	3	120	33x4 SS			**1925						
APPERSON 8-18	8-31x5 33.8 Remy		Johnson	Bijur	DP	3	130	34x4 SS			12550		2550				
8th Anniversary								32x4 1/2					3500				
AUBURN 6-38-B	6-31x4 25.3 Remy		Radd	Remy	DP	3	120	34x4 SS			1445	1445					1665
6-44	6-31x5 29.4 Delco		Radd	Delco	DP	3	131	35x4 SS			1785	1785			2550		20x5
AUSTIN Hy-King	12-21x5 39.6 Delco		Stumg	Delco	D	6	142	34x4 QD			3750	3750	4000	4550	5000	5250	
BELL 18	4-31x4 22.5 A. Kent		Zenith	Dyneto	D	3	114	31x4 QD			1905	995					
BIDDLE H	4-31x5 22.5 Eisman		Zenith	G & D	DP	4	121	32x4 QD			2600		12650		4100	4000	
BOUR-DAVIS 18B	6-31x5 29.4 West.		Stumg	West.	DP	3	118	33x4 QD			1785						
4-31x5 22.5 West.			Radd	West.	DP	3	118	32x4 1/2			1680						
BREWSTER 4-4	4-31x5 25.6 Boech		Zenith	U.S.L.	C	3	125	34x4 SS			5500				8400	8500	
BRISCOE B4-24	4-31x5 16.3 Conn		Buick	A-Lite	C	3	104	30x3 1/2 C			885	885					
BUICK E4-34-35	4-31x4 18.2 Delco		Marvel	Delco	C	3	106	31x4 C			795	795			1185	1845	
E4-44-45	4-31x4 27.3 Delco		Marvel	Delco	DP	3	118	34x4 SS			1265	1265		11695			1265
E-49	6-31x4 27.3 Delco		Marvel	Delco	DP	3	124	34x4 SS					1495		2175		
CADILLAC 57	8-31x5 31.2 Delco		Own	Delco	D	3	125	35x5 SS			3220	3220	3220			4395	
CASE U	6-31x5 29.4 Waths		Radd	Waths	D	3	125	35x4 SS			11875	1875	1875		**2375		
CHALMERS 6-30	6-31x4 25.3 Remy		Stumg	Waths	DP	3	117	32x4 SS			1565	1565	1615	1625	1950	2925	
CHANDLER	6-31x5 29.4 Boech		Radd	Waths	DP	3	123	34x4 SS			11795	11875	1795	2395	2495	3095	
CHEVROLET 400	4-31x4 21.7 Remy		Zenith	A-Lite	C	3	102	30x3 1/2 C			660	685			1060		
PA	4-31x5 21.7 Remy		Zenith	A-Lite	C	3	108	33x4 SS			925	925			1475		
DA	8-31x4 36.4 Remy		Zenith	A-Lite	C	3	120	34x4 SS			11550	1550					
COLE 870	8-31x4 39.2 Delco		Stumg	Delco	C	3	127	33x5 SS			2595	1295	2595	3795	3595		
COLUMBIA C-4D	6-31x4 25.3 A. Kent		Stumg	W. Lord	DP	3	115	32x4			11495	1450			2395		
COMET C-40	6-31x5 29.4 Delco		Miller	Dyneto	D	3	125	33x4					1685				
COMMONWEALTH 4-40	4-31x5 19.6 A. Kent		Carter	Dyneto	DD	3	115	32x3 1/2 SS			1995	1095					
CROW-ELKHART CE-36	4-31x5 19.6 Conn		Zenith	Dyneto	D	3	114	32x3 1/2 SS			995	995		1295	1395		
CUNNINGHAM 8-31x5 45.0 Delco			Stumg	West	D	3	132	35x5			4250		6000				
DANIELS B	8-31x5 33.8 Waths		Zenith	Waths	D	3	127	34x4 QDR			3600	3500	3500				
DAVIS H. I.	6-31x4 25.3 Delco		Stumg	Delco	C	3	119	34x4					1885	1585	1850		
J. I.	6-31x5 29.4 Delco		Stumg	Delco	C	3	125	34x4 1/2					1950	1950			
DIXIE FLYER LS95	4-31x5 16.9 Conn		Carter	Dyneto	D	3	112	32x3 1/2 SS			1095	1095			1375		

[illegible]

†3-passenger. ‡3-passenger. t-towncar.  
\*Convertible.

ABBREVIATIONS—"A. Kent" Atwater Kent, "A-Lite" Auto-Lite, "B. & Ball" Ball & Ball, "Conn" Connecticut, "G & D" Gray & Davis, "Eisman" Eiseemann, "L.N." Leece-Neville, "N. E." North East, "Newcomb" Newcomb, "O.M." Owen Magnetic, "Rafid" Rayfield, "Smbg" Stromberg, "Splitdr" Splitdorf, "T. I. Tsn" Tillotson, "W. Lrtd" Ward Leonard, "D." Disk, "DP" Dry Disk, "P." Plate, "DP" Dry Plate, "C. Cone" Cone, "F." Friction, "G." Gearless, "CU" Control Unit, "Mag. Magnetic," "SS" Straightness, "QD" Quick Detachable, "C" Clincher, "DC" Quick Detachable Clincher, "QDR" Quick Detachable Reversible, "U." Universal, "R. & M." Robbins & Myers. NOTE—37/55x5½ r means that the rear tires are 37x5½ and the front are smaller. Detachable top, 300x, means \$300 extra.

## Aircraft Production Is Found Satisfactory

**Senate Investigating Committee  
Finds Excellent Progress  
Being Made in West**

DETROIT, July 10—Airplane production in the middle Western territory is proceeding satisfactorily. The Senate investigating committee, after leaving the middle West, was greatly pleased at the progress which is being made in the factories in Dayton, Detroit and other centers in this vicinity.

This feeling on the part of the Senate investigating committee is reflected largely by manufacturers who now feel that they have set their pace and that they can see daylight in the way of production in Liberty engines and planes.

The Packard Motor Car Co., still leads in the production of Liberty engines. This concern just fell short of 800 engines during June by a very small margin. Eight hundred was the goal which was set for this month.

The production at the Lincoln Motor Co. is second, with an average of very close to 17 per day. The ultimate capacity of the Lincoln Motor Co. with its newly designed equipment will be about 70 Liberty engines per day, and it is expected that this will be reached during the coming winter.

The Ford Motor Co. has fallen far short of the rather hasty prediction given by Henry Ford during the spring. At that time he stated in his interview given out in Washington that about July 1 the Ford Motor Co. would be producing 100 per day. This was realized to be impossible by those who had had experience in airplane engine production, and the fact that Ford is in production at all is regarded by them as a big accomplishment in spite of the fact that the production falls far short of the mark set by Henry Ford at that time.

The Ford plant, according to best estimates, is turning out 2000 Liberty engine cylinders per day, and is nearing a production of complete engines of 10 per day. This is, furthermore, a remarkable accomplishment in view of the fact that the production heads of the Ford Motor Co. have been largely concerned with rapid production of the Eagle boats, or submarine chasers; one of these was ready to launch on July 4, and they will soon be coming through in a constant string, and eventually at the rate of one per day.

The Marmon company is not yet in production on Liberty engines, but shortly will be. The tooling-up progress is being pushed rapidly, and parts of the engine are reported to be in production. The complete engines, however, are not coming out of the factory as yet, although it is a matter of but a few weeks before the Nordyke & Marmon Co. will be added to the list of Liberty engine producers.

The Cadillac Motor Car Co. is now in production on complete engines. This concern which was one of the first to conquer the difficult connecting-rod manufacturing problem on the Liberty engine, is now turning out, in connection with Buick, complete sets of parts and assembling them. The rate of

production is not stable enough to set a fixed average per day, but soon will be, and probably in a few weeks a production of five per day will be reached. This will be increased rapidly as time goes on, so that this concern will be a fairly large producer of Liberty engines late in the fall or early in the winter.

The Trego Motors Co. is turning out a complete Liberty engine every day or two.

There have been reports that the Navy has taken a large percentage of Liberty engines. This is true, the percentage being estimated at from 40 to 60 of the total. With the rapid production of the De Havilland bombing plane demanding Liberty engines for equipment, the engine production will have to be speeded up to take care of both the navy and army demands. The navy type has proved exceptionally satisfactory, and it has not been confronted with the problems of carburetion at high altitudes which has been one of the difficult kinks to solve in the army plane.

The Liberty engine carbureter system on the army type will have to be modified slightly for the extreme altitude. Advices have come from the staff of the American Expeditionary Forces to the effect that the carburetion system, particularly as concerns the gasoline feed, will have to be altered to eliminate fire danger due to spitting back while cold.

It has been practically decided to abandon all pressure feed of gasoline on the West front, due to the fact that a bullet through the gasoline tank renders the gasoline feed system inoperative, and for this reason gravity feed will have to be substituted, or some other method which is not susceptible to destruction by punctures.

The Fisher Body Co. is pushing along rapidly with its plant, and the 10 acres originally designed for have just about been completed. In addition there will be more buildings added to take care of the enlarged battle plane production program.

The new plane which has been designed at the Packard plant under the auspices of the French Commission has been flown, and has been declared a success. Captain Flachaire of the French Flying Corps, who has been in this country on propaganda work, giving exhibition flights with his Spad in different cities throughout the country, was one of those to fly the new type of machine, and expresses himself as highly satisfied with it. In fact, Captain Flachaire was able to successfully execute a tall spin quite close to the ground with the machine.

## Gasoline Production Touches New Record

**Refiners Produce Nearly Ten Million Gallons a Day in April—  
Stocks Decrease**

WASHINGTON, July 12—The production of gasoline in April of this year was the largest that the country has ever known. It was more than 23,000,000 gal. greater than the production in March and more than 80,000,000 greater than the output of April, 1917. The daily average production for April, 1918, was 9,779,872 gal.

According to figures just issued by the Bureau of Mines, the stock of gasoline on hand at the refineries on April 30, 1918, was 509,197,134 gal., or 17,185,252 gal. less than was on hand one month previous, but it was 163,997,939 gal. greater than the stock on hand on July 30, 1917.

Crude oil production in April showed a very slight drop which, in view of the fluctuations in the production curve, is almost negligible. The decrease amounted to only 38,108 bbl. when compared with the output for March. The 26,201,554 bbl. of crude produced in April constitutes an output greater by about 4,000,000 bbl. than that of February. The stock of crude on hand April 30 was greater than that on hand at any other recent time except March 31, 1918.

The following table gives the amount of crude and distillates on hand at refineries on April 30 and March 31:

	Total Apr. 30, 1918	Total Mar. 31, 1918
Crude run, bbl.....	12,600,062	26,239,662
Oils purchased to be re-run, bbl.....	954,205	3,696,872
Gasoline, gal.....	509,197,134	269,627,968
Kerosene, gal.....	393,527,476	151,228,007
Gas and fuel, gal.....	471,644,479	587,985,804
Lube, gal.....	144,383,212	69,308,351
Wax, lb.....	151,228,317	43,957,019
Coke, ton.....	13,109	44,248
Asphalt, ton.....	101,328	56,901
Misc., gal.....	248,260,551	94,865,148

## Coming Events

Syracuse, N. Y.....	Tractor demonstration.....	July 27
	State Food Commission. F. R. Teall in charge.	
Salina, Kan. ....	National Tractor Farming.....	July 29-Aug. 2
	Demonstrations. A. E. Hildebrand, Manager.	
*Orange County, N. Y....	Tractor demonstrations, New York.....	Aug. 1
	State Food Commission; Calvin J. Huson, Director.	
Fulton, N. Y.....	Tractor demonstration (near Fair Grounds).....	Aug. 6
	State Food Commission. E. W. Underwood in charge.	
*Columbia County, N. Y....	Tractor demonstrations, New York.....	Aug. 15
	State Food Commission; Calvin J. Huson, Director.	
Indianapolis, Ind. ....	Automotive Show, Indiana State.....	Sept. 2-7
	Fair, Indianapolis Automobile Trade Association; John Orman, Manager.	
Chicago, Ill.....	Automotive and Accessories.....	Sept. 14-17
	War Exposition, Municipal Pier. H. V. Buelow, Managing Director.	
*Canada .....	Tractor demonstrations .....	Sept. 17-18-19
Dallas, Tex. ....	Seventh Annual Automobile Show.....	Oct. 14-17
	Texas State Fair.	
Dallas, Tex. ....	Seventh Annual Texas Automobile Show.....	Oct. 14-27
	Texas State Fair.	
Chicago, Ill. ....	Convention and Automotive Equipment Exhibit.....	Oct. 28-Nov. 2
	National Association of Automobile Accessory Jobbers.	

\*Date and place not definitely fixed.



Making Used Cars Pay in This Issue

# MOTOR WORLD

for  
DEALERS, JOBBERS AND GARAGEMEN

Volume LVI  
No. 4PUBLISHED WEEKLY  
NEW YORK, JULY 24, 1918Ten cents a copy  
Two dollars a year

All-Ready Cementless Patches. Ideal for quick road repair. Just moisten with gasoline and apply to tube.



Miller's Wizard Fixall makes permanent repair of tubes, casings and all kinds of rubber goods. Handy, swift and clean.



Miller's Lacehold Boots. Ideal for emergency repair of blow-outs, cuts, etc. Built of many piles of tire fabric.



Miller Beliners are shaped to fit interior of casing snugly. Many piles of strong fabric cured together like casing.

Miller Handy Andy Tube Repair Kit will mend anything from a puncture to a slit in an inner tube. Cement, emery cloth, and full cured live rubber strip.



Pluggum — tough, plastic rubber compound, self-curing, for tire surface cuts and abrasions in outer casings.



## Miller Uniform Accessories and Repair Materials

Every Price Advance in Tires Will Mean Increased Accessory Business to the Dealer.

New tires are not being bought on such a large scale as in the past. Motorists are practising economy—getting the last possible mile out of their tires.

If you can supply your customers with money saving and mileage increasing accessories it will help build up your business generally. Miller Uniform accessories are made by master hands. And the quality that goes into them assures you a permanent and satisfied customer. All Miller accessories do their work thoroughly and well. Be the job large or small, there is one for every need.

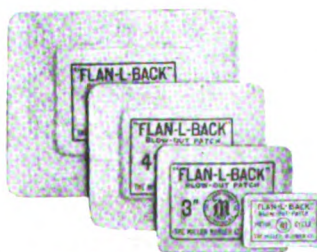
Why not take advantage of present conditions? With the constant rise in tire prices the possibilities of building up a good accessory business were never better. Write us today for further particulars on the Miller line of Uniform Products.

### THE MILLER RUBBER COMPANY

Dept. A35

AKRON, OHIO

Makers of Miller Uniform Tires, Red and Gray Inner Tubes and Miller Surgeons Grade Rubber Goods for homes as well as hospitals



Flannel-Back Blow-Out Patch. Self-curing. Four sizes to fit all casings. Flannel-Back protects tube from chafing.



Miller Rim Clinch Blow-Out Patch shaped to fit snugly. Fabric wings fit under bead. Made in sizes from 3 inches to 5 inches.

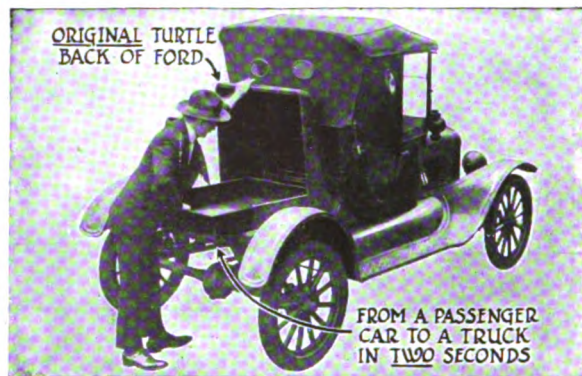


Miller Hook-Hold Boot for covering blow-outs and cuts. Hooks-to-flange of rim on clincher type and under tire bead on straight side type. Fits firmly.



# Here's an Opportunity that No Dealer Can Afford to Overlook

FOR  
FORDS



FOR  
FORDS

## UTILITY DISAPPEARING TRUCK

Quick sales! Big sales! Easy sales!—that's the story of the **UTILITY DISAPPEARING TRUCK** for Fords. It is the ideal proposition for the progressive dealer who wants to do business on "big time" schedule. It is not a novelty or an ornament but a real, vital, useful article that any man who owns a Ford roadster should have and will have if he is told about it.

Once the Utility Disappearing Truck is installed, a Ford roadster can be converted from an exclusive passenger car to a half-ton truck in *two seconds*. (This was proved by actual experiment.)

Price Only **\$32.<sup>50</sup>** Complete

**Hauls Any Load Up to One-Half Ton**

No matter what the nature of the load to be carried, if it does not exceed a half ton it can be carried quicker and cheaper with the **UTILITY DISAPPEARING TRUCK**. No extra attachments or parts—just lift the turtle back, slide out the **UTILITY DISAPPEARING TRUCK** and have a half ton truck in *2 SECONDS*.

The truck is completely out of sight under the **ORIGINAL** turtle back of the Ford. When not in use the **Utility Disappearing Truck** cannot be seen by the most careful examination. Can be completely installed by **anyone** with a hammer and wrench in **one hour**. Only four bolts used in attaching it. No rattle, no vibration—a firm, secure truck body made of heavy gauge steel.

The turtle back cannot be injured or marred when Ford is being used as a truck. It lifts up automatically and protects back of seat from scratches. Even when the **UTILITY DISAPPEARING TRUCK** is in use the Ford does not lose any of its original appearance. It is still a trim, neat little runabout.

**DEALERS!** Here's an opportunity to get in on one of the biggest selling propositions on the market. It's a real proposition.

*Write for a sample and the agency for your community*

District Offices:  
New York, 149 Church St.  
Seattle, L. C. Smith Bldg.

**THE HILL PUMP VALVE CO.**  
Archer Ave. and Canal Street  
CHICAGO

District Offices:  
San Francisco, 149 New Montgomery St.  
Kansas City, Rialto Bldg.



# MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

PUBLISHED EVERY WEDNESDAY BY

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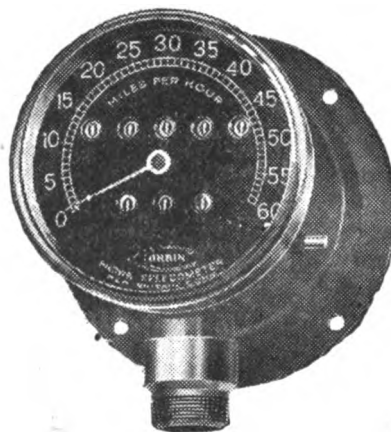
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## Convenient As Well As Accurate

WHILE its accuracy attracts chief attention—as it should—it is noteworthy that convenience has also been taken into account in every detail of the

### CORBIN-BROWN SPEEDOMETER

The Corbin-Brown is exceptionally easy to read because its indicating hand is pivoted in the center, thus allowing almost three-fourths of the circumference for calibration; also because the numerals are large and clear.

Ease of reading is further facilitated by placing the trip-odometer *below* the indicating hand, where the driver's view of it is not obstructed at any time.

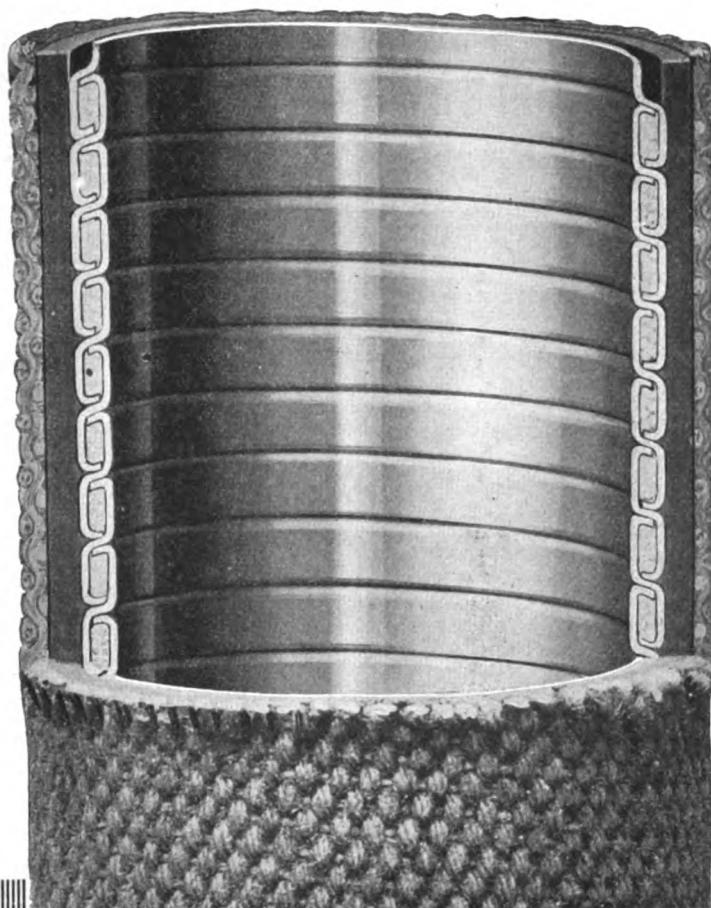
A feature of special convenience is the Maximum Speed Hand, an extra and exclusive fitting. It accurately registers the highest speed attained and stays at that point until reset to zero, which can be done in an instant at any time. The speed record remains as long as you want it, thus relieving you of watching the dial while driving at a fast pace.

Write Today for Catalog

## Corbin Screw Corporation

American Hardware Corporation, Successor  
 New Britain, Conn.

Branches: New York Chicago Philadelphia



## HAVE YOU A LEAKLESS HOSE?

YOUR PARAMOUNT REQUIREMENTS of a gasoline hose are well defined; you need flexibility, durability and no leaks. A hose all of metal will leak, a hose all of rubber won't last long, but

# TRIPLEXD

## THE GASOLINE HOSE

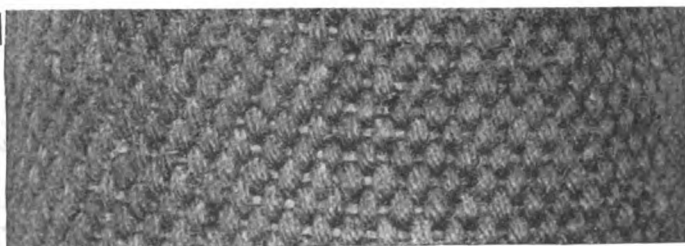
is FLEXIBLE — LEAKLESS — LONG-LIVED

Metal, rubber and woven fabric cover, consolidated, and welded in the vulcanizer, form the best gasoline hose, and we guarantee TRIPLEXD against imperfections.

The sure proof of TRIPLEXD QUALITY is to be had from any and all of the thousands of filling stations using this hose. The experimental stage was passed years ago. We know what you need and specialize in making it.

*Send now for descriptive matter and prices to Dept. A-1.*

**METAL HOSE & TUBING Co.**  
INCORPORATED  
RAYMOND & TILLARY STS.,  
BROOKLYN, N.Y.



When writing advertisers please mention Motor World—it identifies you.



# MOTOR WORLD

for  
DEALERS, JOBBERS AND GARAGEMEN

Vol. LVI

New York, U. S. A., Wednesday, July 24, 1918

No. 4

## Well, What the-----!



*The dealer would do well not to place too much credence in the adverse rumors he hears. Count on your fingers the wild stories of past months that haven't materialized yet and impress upon your customers the fact that newspaper reports don't raise the price of gas or eliminate this industry*

## BUILDING A *Used Car Department That Pays*

Waterhouse Sold 192 Cars During First Five Months  
of 1918 and the Department Is Making Money

By C. R. Williams\*



The used cars are sold on the same floor as the new cars, but the salesroom is around the corner and attention is drawn to it by a big sign

UP to January, 1917, we had no used car department, operated as such. Everybody sold used cars—nobody was responsible for their sale or condition.

Operating a *used car department* we sold, during 1917, 353 used cars. This year we have already sold in 5 months about 200 cars, and unless the scarcity of automobiles develops more rapidly than we anticipate at the present time we feel safe in saying that we will sell over 425 used cars this year.

We made money in our used car department last year. Quite a lot. I am not permitted to give the figures for publicity, but any dealer can have them upon request.

We do not believe in secrecy of methods between dealers, but we do believe in building-up always, and we are for building up the industry in which we

\*Williams is manager of the used car department of the Frank Waterhouse Co., Seattle, Wash. He will be remembered by MOTOR WORLD readers for his story in the May 9, 1917, issue of the MOTOR WORLD on the fundamentals of successful used car selling. Since then he has proved his principles and in this story he tells how

### WARNING

#### THIS IS AN OVERHAULED CAR

Main Bearings, Connecting Rod Bearings and Pistons may be new.

Do Not Run faster than  
25 Miles an hour  
for 300 miles

Keep Battery and Radiator full of Cedar River water. Don't let oil supply get too low.

Don't strain motor by making car pull slow in high gear on grades until motor is worked in.

#### NOTICE

Auto Dept.—Frank Waterhouse & Co.  
Used Car Dept.—Pine at Bellevue

This little ticket, tied to used cars when rebuilt, saves much future trouble by getting the buyer started with right ideas

are engaged. We are always open for advice. We adopt any other dealer's ideas which appeal to us. Dealers are certainly welcome to any of our ideas which may be helpful.

Shown with this story is a folder which has resulted in freeing this company from many of the troubles experienced in the used car department. Our idea in getting up this folder was that a plain statement of facts would probably help to keep us out of trouble, and we found that this folder has certainly helped.

I found that one of the hardest things in the used car business was to keep from being put in a position where, as manager of the department, I had to give away a lot of equipment or repairs on a car after it was sold, because of some veiled or implied promise made by the salesman when he sold the car.

Ninety per cent of all salesmen show that they are anxious to sell goods, they almost get "buck fever" when the customer is signing the order or passing over the money. It is at the last minute—then, even more than when leading up to the closing point—that the salesman is liable to assent to almost anything that the customer asks. He may not actually promise anything, but often when asked about the extra tire or

## A Few Frank Statements!!!!

By C. R. WILLIAMS, Mgr. USED CAR DEPT.

**WE DO NOT PROMISE YOU EVERYTHING BUT  
WHAT WE SAY—IS SO—IS SO!  
AND  
WHAT WE SAY WE'LL DO—WE'LL DO!**  
(We have that reputation)

**WE TELL HERE WHAT WE WILL DO WHEN  
SELLING USED CARS.**

**ITS ALL IN  
BLACK AND WHITE**

Published by the  
**USED CAR DEPARTMENT**  
of  
**FRANK WATERHOUSE & COMPANY**  
Five St. Bellevue

## Some of the Things this Company DOES NOT DO and SOME of the Things THAT ARE DONE.

**MISREPRESENTATION** of goods is not tolerated in this establishment and in order that there shall be no misunderstanding on the part of customers who buy cars here, we have printed this statement of our policies.

Every purchaser of a used car will be given a copy of this folder at the time he makes a deposit on a car.

**WE WILL** guarantee for a period of 60 days from date of delivery (unless the customer is told to the contrary, and it is so written in his order) all used Studebakers sold for \$600.00 or more. We will not guarantee any car sold under this price. We will NOT GUARANTEE any other make of car sold, except Marmon cars, for which we are also agents. We will NOT make any replacement of tires on used cars.

**THE GUARANTEE** which we give is the guarantee adopted by the National Automobile Chamber of Commerce, Inc.; it is the same guarantee which we give on new Studebakers. (For a period of 90 days). See copy on opposite page.

**WE GIVE SERVICE.** If you buy a Studebaker you will receive the best service it is possible to get with an automobile. We have been giving it for years and our reputation is established. By SERVICE we mean this—We carry a big stock of parts and maintain a large force of skilled Studebaker workmen to give your car attention when it needs it.

**WE BELIEVE** that our USED STUDEBAKERS are the best used cars for anyone to buy in Seattle. Let us tell you our Reasons for this statement.

## COPY OF WARRANTY GIVEN WITH NEW AUTOMOBILES

You get this same guarantee with practically all new cars including the Mitchell, Packard, Pierce Arrow, Ford, Dodge, Buick, Marmon, Peerless, Locomobile, Hudson and Studebaker.

### STANDARD WARRANTY

(Adopted by National Automobile Chamber of Commerce)

We warrant each motor vehicle sold by us, whether passenger car or commercial vehicle, to be free from defects in material and workmanship under normal use and service, our obligation under this warranty being limited to making good at our shops any part or parts thereof which shall within **THREE MONTHS** after delivery of such vehicle to the original purchaser, be returned to us with transportation charges prepaid, and which our examination shall disclose to our satisfaction to have been thus defective; this warranty being expressly in lieu of all warranties expressed or implied and all other obligations or liabilities on our part, and we neither assume nor authorize any other person to assume for us any other liability in connection with the sale of our motor vehicles.

This warranty shall not apply to any motor vehicle which shall have been repaired or altered outside of our shops in any way so as, in our judgment, to affect its ability or reliability, nor which has been subject to misuse, negligence or accident, nor to any commercial vehicle sold by us which shall have been operated at a speed exceeding the factory rated speed, or loaded beyond the factory load capacity.

We make no warranty whatever in respect to tires, rims, ignition apparatus, horns or other signaling devices, starting devices, generators, batteries, speedometers, or other trade accessories, inasmuch as they are usually warranted separately by their respective manufacturers.

*The things the dealer will do and won't do are clearly set forth in this little booklet. After the customer reads this he has a clear understanding of what he is going to get*

extra tubes, or a guarantee, he says, "I think I can fix that up all OK," or "you don't need to worry about that, Mr. —," etc., etc.

Later on the manager has to make good on these assertions, in order to keep the "dear house's" reputation for square dealing intact.

When all of our salesmen sold used cars—and our establishment is quite large—we were in continual hot water—couldn't help but be, and even this year, although we only have two men in our used-car department—they sell used cars only—we have had our troubles. Our salvation is the small folder given to every customer when he takes his car away. If any one does not care to buy

under the conditions imposed in this folder then we cheerfully offer to cancel his order.

But it doesn't work out that way. *They don't want to cancel orders. The folder explains itself.* We could have changed the subject-matter on pages 1 and 2 and gotten it up differently, but it isn't of any particular importance just how you say what is said on the circular—it's the idea of handing a man in writing a statement of some kind, telling him *just what* and *just what* NOT you will do.

If a promise is made by any employee it must be kept, and an *implied promise* should be just as binding as any other kind. Buyers expect and try to get all

they can. It's natural that they should. Of course you can drive a horse and wagon through any guarantee of almost any description.

A correct interpretation of the guarantee you give will spell success. You can either make or lose your reputation for square dealing, just as you honestly or dishonestly interpret the guarantee which you give. *Do what you OUGHT to do and do it willingly.* Let your conscience and good business judgment govern your interpretation of the guarantee you give.

The men in charge of service, the employee whom you have charged with the important position of interpreting your

(Continued on page 39)



*This frame structure, 25 blocks from the main salesroom, holds 100 cars and provides facilities for minor repairs, tuning up, unloading and making new cars and trucks ready for the salesroom floor.*

*It takes a big load off the service station*

# CAMPAIGN

## of the National Automobile Dealers Association

# MOVES RAPIDLY

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Three Meetings in the East This Week—Buffalo, Newark and  
Boston—Memphis Organizing on County Plan—North  
and South Carolina Plan Mass Meeting—Maine  
Active—Big Meeting in Chicago July  
30 — Support Coming from  
All Points

---

**W**HILE members are coming in from everywhere for the National Automobile Dealers' Association, the series of meetings addressed by President F. W. A. Vesper and Executive Secretary E. E. Peake has swung back to the East.

Buffalo held a meeting Tuesday, July 23. Newark has one to-night, at which the New Jersey dealers will hear Vesper's story. Friday, the 26th, the New England dealers will meet in Boston, as is told elsewhere in this story.

Following the Vesper meeting the Buffalo dealers plan to organize western New York on a county basis and secure the memberships of all the dealers in the Buffalo territory. A county membership committee has already been named.

Portland, Me., has held a meeting and has organized the territory to follow up the work.

Richmond, Va., states it will secure at least 100 dealers in that section.

Memphis, Tenn., is organizing on the county plan, with a chairman and committee in each county reporting to a Memphis committee, and is offering a prize to the dealer who secures the most memberships.

North and South Carolina are working and plan a big meeting of the dealers in both states at Charlotte.

The Atlanta Automobile Association is getting many members and securing backing for the conservation plan.

Minneapolis, Fort Dodge and Des Moines, where Vesper meetings were held, are following up with county organization and big increases are expected.

Both Chicago and Boston are holding meetings in the towns throughout their territory and are sending salesmen and representatives through the territory to supplement the mail work.

Chicago will have a big meeting July 30.

Omaha will have a meeting as soon as the date can be arranged, at which the western Iowa and Nebraska dealers will hear Vesper and Peake.

The Kansas City territory is paying special honor to Executive Secretary Peake, who is secretary-treasurer of the

Kansas City Motor Car Dealers' Association. Memberships are being secured in considerable numbers from all parts of the territory through an effective operation of the county committee plan.

The county committee plan is regarded by Peake as the easiest and most effective means for covering a territory thoroughly and systematically. As a starter it is recommended that the dealers' association in each big city or distributing center name a membership committee of five. In Kansas City this committee consists of R. P. Rice, Ford Motor Co., chairman; J. F. Martin, Buick Motor Co., vice-chairman; E. M. Lied, Willys-Overland, Inc.; E. R. Carpenter, Studebaker Corp., and W. J. Brace, Hudson Motor Co.

This committee held several sessions and selected in each county in the territory the man considered by the five as best qualified to take charge of his county. He was made chairman of a county committee and notification was made to him through a letter. The distributors also wrote their own dealers recommending membership.

### *Memberships Come Rapidly to Headquarters*

ST. LOUIS, JULY 22.—"More than 300 members this week" was the announcement of Assistant Secretary Holke of the N. A. D. A. There was much of enthusiasm about the President's office. President Vesper reached home from the trip, which included Minneapolis, July 12, where there was what he called a "wonderful" meeting, attended by more

than 1100 dealers. It is expected that when the membership report comes in from this meeting there will be the most pleasing announcement yet put out.

"It is amazing how the publicity is reaching the individual," said President Vesper. "Recently it appears that half of the membership increase has come from the unaffiliated dealers. Here is a man



## *What Is Doing in the Membership Campaign of the* **National Automobile Dealers' Association**

*To arrange meetings, correspond with association  
headquarters, 3550 Lindell Boulevard, St. Louis*

### Meetings This Week

Buffalo (Western New York) .....	July 23
Newark (All New Jersey) .....	July 24
Boston (New England) .....	July 26

The following associations have sent in 100 per cent of their memberships and most of them a considerable number from the surrounding territory.

Association	Number of Members
Automobile Dealers' Association, Albany, N. Y. ....	25
Automobile Trade Association, Atlanta, Ga. ....	25
Boston Automobile Dealers' Association, Innc., Boston .....	75
Brown County Automobile Trade Association, Green Bay, Wis. ....	25
Chicago Automobile Trade Association, Chicago .....	200
Automobile Show Co., Cleveland .....	100
Dallas Automobile Trades Association, Dallas, Tex. ....	50
Kansas City Motor Car Dealers' Association, Kansas City .....	125
Little Rock Automobile Dealers' Association, Little Rock, Ark. ....	50
Los Angeles Motor Car Dealers' Association, Los Angeles .....	200
Louisville Auto Dealers' Association, Louisville, Ky. ....	25
Milwaukee Automobile Dealers, Inc., Milwaukee .....	75
Minneapolis Automobile Trade Association, Minneapolis .....	50
Oklahoma City Motor Car Dealers' Association, Oklahoma City .....	75
Philadelphia Automobile Trade Association, Philadelphia .....	50
Rochester Auto Trades Association, Inc., Rochester .....	50
Rocky Mountain Automobile Trades Association, Denver .....	200
St. Louis Automobile Manufacturers & Dealers' Association, St. Louis .....	25
Springfield Automobile & Accessories Association, Springfield, Mo. ....	20
Worcester Automobile Dealers' Association, Worcester, Mass. ....	30
Utica Motor Dealers' Association, Utica, N. Y. ....	12
Jacksonville Automobile Dealers' Association, Jacksonville, Fla. ....	10
St. Paul Automobile Trade Association, St. Paul .....	12
Sioux Falls Auto Association, Sioux Falls, S. D. ....	21
Automobile Business Association, Grand Rapids, Mich. ....	25

who writes of seeing the plan of the N. A. D. A. in Motor World, and he sends his check. Another letter mentions the reproductions of bulletins in Motor Age of July 11, and asks how to get them for a campaign in his town, where no organizer has yet worked. Wherever motor-car dealers are thoughtful, and read, we are getting hold."

The recent flow of memberships as a result of the organized offensive on the part of President Vesper and Executive Secretary Peake, and the effective propaganda by that portion of the motor-car press, including trade and daily papers which have the success of the trade at heart, has got beyond the office force. The work of checking up and arranging lists is somewhat behind, but additions to

(Continued on page 44)

### **Vesper Replies to Service Objectors**

**Says Conservation Is Asked by  
Uncle Sam but Not Demanded  
—Points to Shame of Failure**

ST. LOUIS, July 22—Scores of inquiries are received at President F. W. A. Vesper's office asking "Where did the National Automobile Dealers' Association get the authority to tell me to close my shop?"

Other service shop owners are openly rebellious. A Shreveport, La., dealer advertised that "no one could make him close his shop," but he added, "The Government can have the shop if it needs it."

Usually the spirit is not one of open rebellion but arises from a feeling that the owners' rights are being ignored and that someone behind the plan has selfish reasons. Answering these letters and telephone calls has become a burden, and President Vesper has drafted the following communication, which is being sent to all inquirers. It recites the history of the movement and gives the reason. The communication follows:

In carrying out the suggestions of the War Service Committee it sometimes develops that because of misconception of its situation, the local committees meet with a number of unexpected petty objections. Among those who are looking for some justification for refusing to comply with the War Service suggestions, the most prominent are those

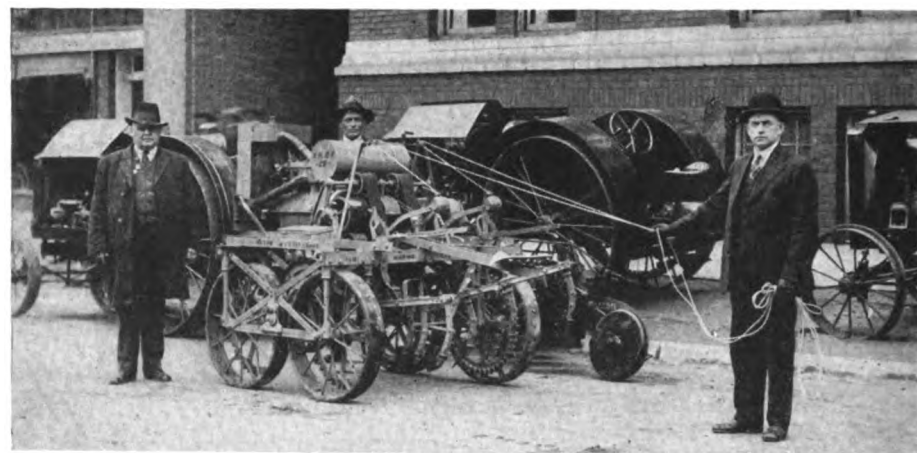
(Continued on page 44)

# PUT THE TRACTOR *into the* Limelight

## *Williams Staged Automotive Demonstration in the Streets of His Town*

WHILE some of the publicity stunts of the C. U. Williams & Son Co., Bloomington, Ill., savor somewhat of the spectacular, they are, nevertheless, always eminently practical in their nature and consequently effective. They also are characterized by originality, Williams himself being especially prolific in publicity ideas.

One such, used recently, is pictured on this page. It was a street demonstration of motorized equipment and included Overland automobiles, for which the company is distributor over a considerable portion of Northern Illinois, and of Lauson, Interstate and Leader



*Williams hitched a motor cultivator-tractor up with a pair of lines, just like a horse, and drove the thing all around the pavement to show the Saturday shoppers from the country how easily they could run one of the machines on their farms*

tractors and S. K. & S. Co. motor cultivators, distributed by the subsidiary company, the C. U. Williams & Son Tractor Co.

### Picked Saturday for Show

The demonstration was staged on a Saturday, the usual farm market day in Illinois, and was effectively advertised in advance through the local papers and by means of personal letters of invitation sent out on the firm's regular mailing list of prospects. Arrangements were made with the city authorities for the use of the street in front of the Williams garage for the day and

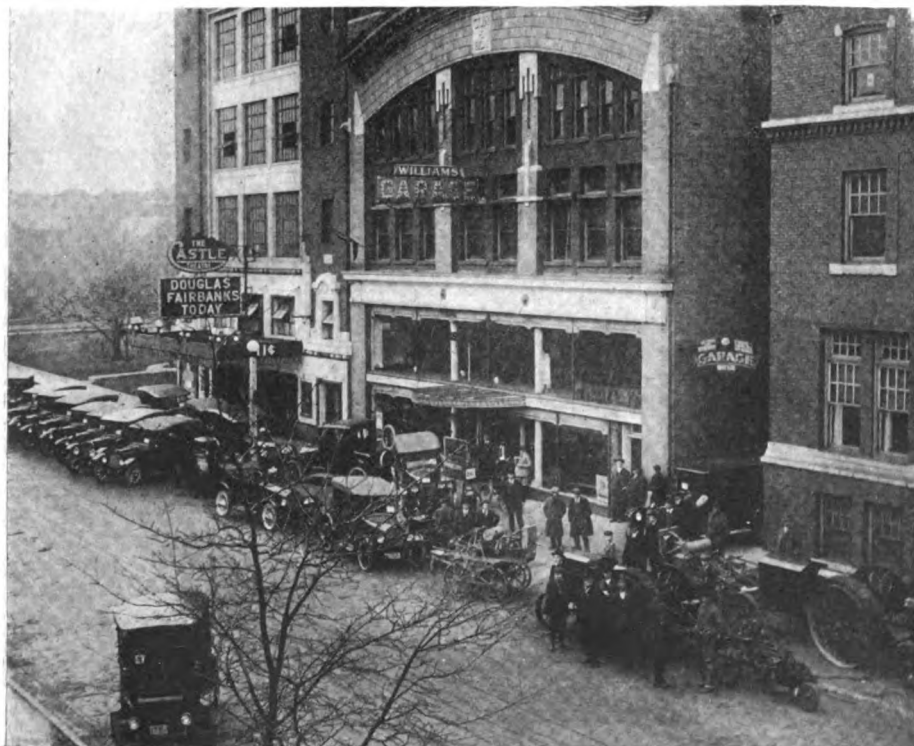
both sides of it for, a block were utilized. The picture gives a comprehensive idea of the magnitude and character of the display that was made on this occasion.

The demonstration was very much alive. Automobiles, tractors and motor cultivators were demonstrated under their own power and motors in their various applications and practically owned the street for the greater portion of the day. The spectacular feature was the performance of the motor cultivator under line drive. The control levers were taken off and reins substituted. From a position in the center of the street the operator put the cultivator through a series of evolutions which illustrated its ease of control.

This machine is made in one and two-row sizes and is designed primarily for the cultivation of corn and other row crops. By dropping the shovel beams and substituting a drawbar attachment, however, the machine becomes a mobile motor adapted for use in the hay field, for the spreading of manure or for any of the miscellaneous hauling which is to be done about the farm. Being equipped also with a pulley it can be employed for light belt work. The advantage of line control is that it can be driven from the seat of a wagon—a manure spreader or a binder just as can a team of horses. It excited as much interest as any other feature of the Williams display.

Unfortunately rain interfered somewhat with the success of this particular event, although a goodly sized crowd was present nearly all day. Factory representatives, as well as almost the entire selling organization from both the Williams companies, were present to demonstrate and explain.

Williams believes in keeping his business in the limelight and takes an active personal interest in getting all his advertising plans across. It is by such means that Williams gained and maintains his reputation as one of the most progressive and successful of the automobile dealers in Illinois.



*The Williams garage is next door to a theater and some of the farmers forsook Douglas Fairbanks to see the Williams automotive apparatus perform. They agreed that the agile Douglas has nothing on some of Williams' wares*

# Department Store Methods

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## in the

# Garage Business

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*MODERN MERCHANDISING PLANS OF NEW CONCERN  
INCLUDE EVEN "IDENTIFICATION COIN" IN CONNEC-  
TION WITH NATIONAL "CHARGE ACCOUNT" SYSTEM*

---

Here Are Some of the Department Store Ideas as Applied to the Garage Business

Full-page combination advertisements.

Engraved invitation, orchestra luncheon and souvenirs for "opening" day.

Special campaign for women's interest, including rest room.

Big weekly bill for cigars for men, as souvenirs.

Careful departmentization of business, including specializing in painting.

Periodic reading of service code to assembled employees.

Careful instruction on never missing chance to sell something else to every motorist stopping for gasoline.

Plan to establish national "charge account" system with identification coin for each customer in good standing.

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**T**HINK of a garage opening including such incidentals as:

A reception with a concert by a full orchestra.

A buffet luncheon for 500 persons.

A cigar bill exceeding \$50.

A gift of gasoline and lubricating oil for everyone attending the luncheon.

Tourists present from many cities, including as far away as Seattle, Wash.

Some event? Well, yes. But the promoters of the Lincoln Garage & Auto Supply Co., Inc., which gave this elaborate "function" last month, when it threw open the doors of its building at 3017-3023 North Broad Street, Philadelphia,

didn't consider that they were throwing away any money, at that.

"You've got to spend at least a little if you would get much back," is the line of reasoning followed by Morris Stein, president of the company, and his associates in the enterprise. And although the building occupies an important strategical position on the Lincoln Highway, opposite the North Philadelphia station of the Pennsylvania railroad, it was not deemed an unwise policy to "honk the horn" a little.

#### Everybody Was Invited

Elaborate engraved invitations were sent out to a selected list in the first place and the general invitation to the public was announced through full-page advertisements in leading newspapers. These first two steps were like the department store's

methods of introduction — indisputably.

And the next step was somewhat akin: Not only did the advertising carry an announcement directly in the center of the page, that "10 per cent off on accessories," including tires and tubes, would be made on the opening day, but that with every 5 gal. of gasoline purchased 1 qt. of lubricating oil would be given free—this, besides gifts at the luncheon, already mentioned.

In addition, eleven other business houses combined in publicity with the garage, their advertisements appearing as an attractive border around that of the garage company and of course all sharing in the expense of the advertising.

There was nothing of the "three-ring circus" suggested in the way the affair was engineered, either. Any one in the garage business who might be contemplating a similar step should note that

carefully. The aim was to have the reception—notwithstanding that it was in a garage—as quiet and cordial as if in a private house.

The luncheon was served on the second floor, which contains 8500 ft. of floor, affording ample room for the number of guests to be served at any one time. The reception lasted from 3 in the afternoon till 6, and tourists came from many points, including New York, Buffalo, Wilmington and as far west as Seattle, Wash. They were attracted by the advertisement while passing through or by the “doings” along the Lincoln Highway at this spot.

#### Special Painting Department

Downstairs the floor space is likewise 8500 ft., and, while the second floor is planned entirely for car storage, on the first floor, properly departmentized, will be provided, in addition to considerable storage space, a large general machine and repairshop, a line of accessories, tires and tubes, a service station and a department devoted to painting for the motor car trade in all of its phases. A specialty will be made of this department.

There will be a retiring room for women, equipped like that in a department store, off the general offices. While the reception room is being prepared a practice now is being made of inviting without fail all women in a party of motorists stopping at the garage to come in and rest. Pleasing the women—distinctly another department store idea—will be a feature of this business.

“A garage sells nothing if not service,” said S. I. Stein, treasurer of the company, who is the active office man and who is responsible for the majority of the department store methods—although he is a real estate operator. Every effort is being made to show accessories and automobile equipment while the women of the party are resting in the garage according to the department store idea that the women of the household buy 80 per cent of the merchandise for the family.

It is the department store “salesmanship school” plan applied. Every once in a while it will be the custom for S. I. Stein—he has already started it—to assemble the employees and read to them a pamphlet on the service code of the garage, giving all sorts of good advice for every phase of the business.

#### Everybody a Prospect

“No motor car ever stops here for gasoline,” said he, “that one of the employees does not unofficially look into the generator, examine the batteries, the radiator, the oil gauge and look for a chance to sell something—especially oil—and see to it that in spite of any oversight on the part of the customer he leaves properly supplied, if it's only water, which, by the way, often is neglected elsewhere.

We thus help the motorist and prevent his becoming embarrassed by being stalled where there is no garage handy, and also help ourselves by selling something he needs. There is a manner of



*The Lincoln Garage & Auto Supply Co., which opened up in Philadelphia with department store ideas, combines classic and modern architecture in its façade*

approach in doing this that is good salesmanship and that could not give offense by suggesting to the car owner that he is thoughtless about such things.”

The souvenir idea of the department stores finds its echo here largely in the fact that the company's bills for cigars alone reach the weekly average of \$15. This is just the “smokes” consumed in inviting each customer into the main office to have a chat if he has to wait for a tire to be put on or for some minor repair that is easily and rather quickly done. It rests a motorist to get out sometimes and “change the focus.”

#### Red Tape Is All Cut

Perhaps there is one thing on which Stein and the department store do “gibe”—and that is, he dislikes any unnecessary “red tape,” or leg-tripping “super-systems” accompanied by cross-filing and hocus-pocusing around with loose-leaf bookkeeping and all sorts of card index plans and filing cabinets. “Just plain bookkeeping with what absolutely necessary card-indexing we have to employ is enough for me,” he says.

And yet he is planning to put into effect at an early date a national “charge account” or credit system for garages of standing throughout the country, whereby it will be possible for car owners who pay their bills with reasonable promptness to open accounts with such garages and be accommodated in cases of emergency; for instance, they might have an accident while touring and be without the required sum to have the repairs paid for on the spot, or perhaps need an extra tire or so.

#### National Charge Account

“My idea,” said Stein, “is to use the coin identification system, like that in a department store charge account plan. To the patrons of garages of good standing could be presented such a small coin for identification purposes, showing that its possessor was in good standing and could be trusted for credit. Each coin

would bear the customer's number, which would be rated on his special account with the various garages. Such accounts would be indexed alphabetically so that no more time or trouble would be consumed in seeing if the customer were ‘good’ than in the case of the department store patron whose account has to be ‘looked up.’ It takes only a moment or two. Between garages near together inquiries of course could be made and answered over the telephone, and perhaps in this way occasionally a bad debt could be prevented. There probably would be some bad debts, as there are always where credit is extended as a system. I have not yet worked out any percentage. But I intend to take this matter up with the garage association.”

Stein suggests that garagemen patronizing some particular oil concern might apply to that company to be allowed to use its credit list for reference in cases of uncertainty. He says that this is done to a considerable extent, and that the oil companies usually are glad to lend that much assistance.

Of course an association could act as a clearing house for all that sort of information if enough garage owners became interested in the plan.

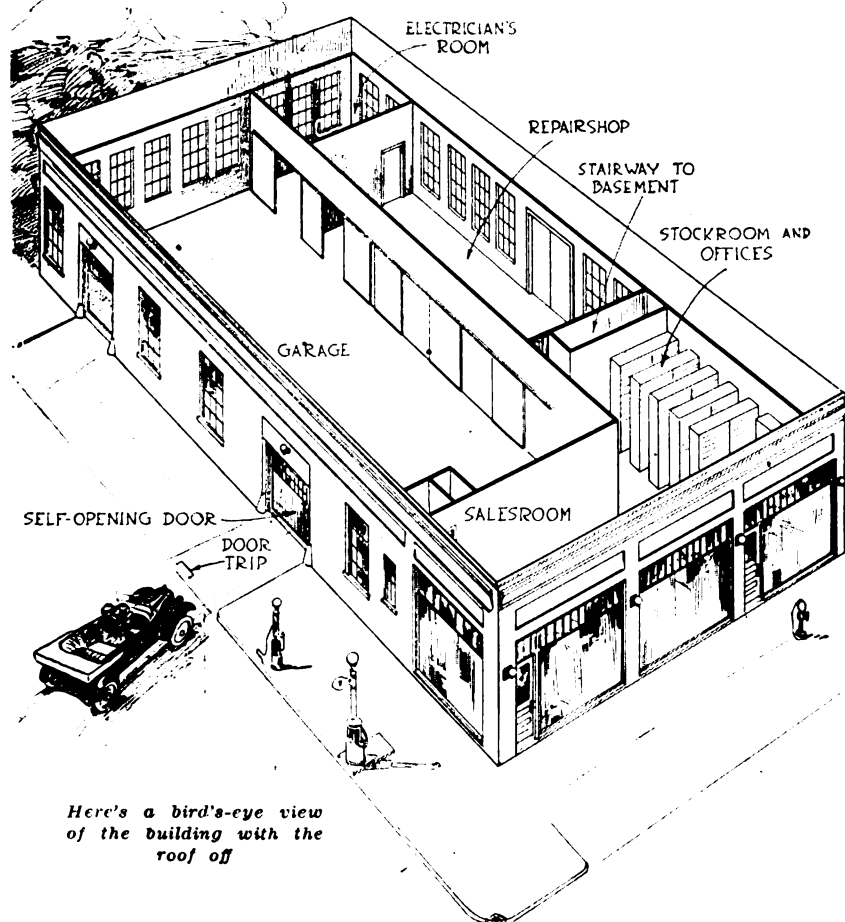
#### Trend Toward Cash Basis

While there are other garagemen in Philadelphia who incline toward extending credit, whether on a national, state, city or individual plan, outside of Philadelphia in Pennsylvania, the trend just at present seems to be in the other direction. His methods will be watched by the trade with interest.

As an example of garagemen and dealers who appear to be inclined to close up on credit because of increased costs at this time and because the firms from which they purchase compel them to take such action is cited the advertisement of a group of 34 from Newcastle, Ellwood City and Hillsville, Pa. They ran an advertisement in the dailies of those vicinities.



# If You Want a Building



Here's a bird's-eye view of the building with the roof off

1—on a corner lot 75 x 135

2—with: a—car salesroom  
b—supply store  
c—repairshop  
d—garage

3—of one story

4—For \$16,000

5—up-to-date

*Here Is a  
Good Example*

It's So Good' Ford is  
Using It As a Model

At a cost of approximately \$16,000, the Motor Service Co., Fond du Lac, Wis., T. W. Meiklejohn, manager, has produced a model sales and service station. The company is distributor of the Ford at Fond du Lac and the station is operated primarily as a sales and service station for that car.

So perfect are the arrangements and so well conceived is the plan of the station that it has been selected as a model by the Ford Motor Co. and descriptions and specifications covering it are sent out by that company as expressing what the ideal garage and service station should be.

The first condition to a duplication of the Motor Service Co. garage is that it must have a corner location. The building is 73½ x 132, one story, with 23 x 40-ft. basement under the office section. The salesroom, occupying the major portion of the front, as well as the office and accessory departments, are separated from the garage and repair departments by substantial partitions, which, however, are well supplied with windows.

Direct access from the salesroom to the garage and service room is through swinging doors in the center of the partition. A full height partition, cut for desk windows and show cases, separates

the salesroom from the office and accessory store. In fact, the office and accessory store are virtually one, and as this room is completely enclosed no one who is not a regular office employee has access to the accessory stock.

The salesroom is 18½ x 54 and the office and accessory department, 19 ft. 6 in. x 37 ft. 5 in. The salesroom front is almost entirely of glass, the floors are terrazzo and the ceilings steel, decorated in a soft gray. The result is an abundance of light and a clean cheerful aspect, which contributes enormously to the attractiveness of the cars on display and to the efficient lighting of office and accessory room. The attractive appearance of the salesroom is enhanced by an artistic arrangement of furniture, palms, flowers and other adjuncts.

The garage and service room occupies the long extension of the building and is 110 ft. 5 in. x 47 ft. 8 in. This room has a trussed roof without posts. It has a cement floor with metalcrete finish, insuring cleanliness and durability. In the extreme outside corner of this room is the wash rack, about 20 ft. square, and with a 4 x 6 ft. grating.

Separated from the service room by a partition which is cut by numerous sliding doors, is the repairshop. This lies

directly back of the office, with which it communicates directly, and is 73 ft. 5 in. x 23 ft. It is equipped with all necessary machinery. In addition to numerous outside windows, this room enjoys the added advantage of three skylights, each 6 x 9 ft., and is always light and airy. This attention to lighting facilitates repair work. The electrician's room, 18 ft. 1 in. x 23 ft., occupies the extreme corner and communicates with both the repairshop and the garage.

Details of arrangement and construction are given in the plans reproduced herewith. Careful consideration was given the relative importance of departments when designing the station, as well as their convenience of location, in order to facilitate and make effective the operation of the plant. If any part seems open to criticism it would appear to apply to the showroom, which gives the impression of being rather narrow for its length. Nevertheless, experience has proved the wisdom of the arrangement, and the fact that the station as a whole is regarded as a model justifies the dimensions adopted for the various departments. The salesroom is ample if not crowded with too many cars.

Two features are worthy of more detail.  
(Continued on page 15)



*ABOVE — The exterior is attractive yet carries more signs than the average man gets on without making his building look blatant*



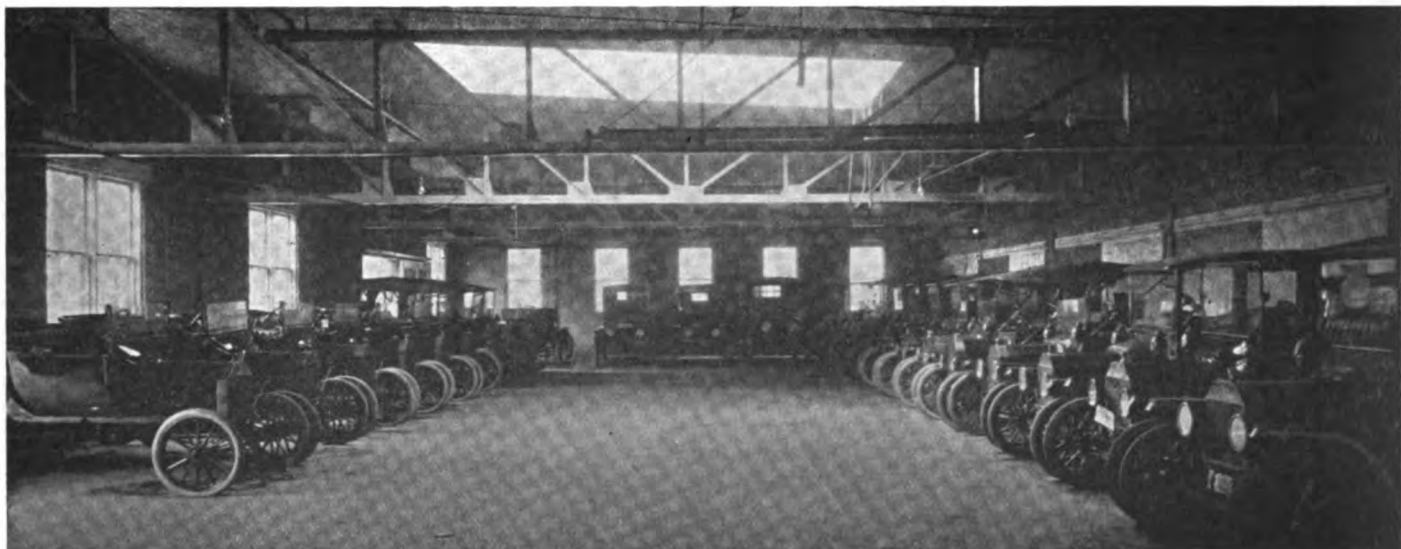
*LEFT — The salesroom is not wide yet it is big enough for the Ford. However, care must be used not to crowd the floor*



*There is plenty of room in the repairshop but none to spare. Part of the equipment is a broom and a man who knows how to use it*



*The stockroom is near the front, where the goods are handy to the man in the salesroom. Metklejohn passes up no automotive beta*



The garage affords plenty of room with ample turning space, and the space is made 100 per cent valuable by the absence of posts. Note the clean floor

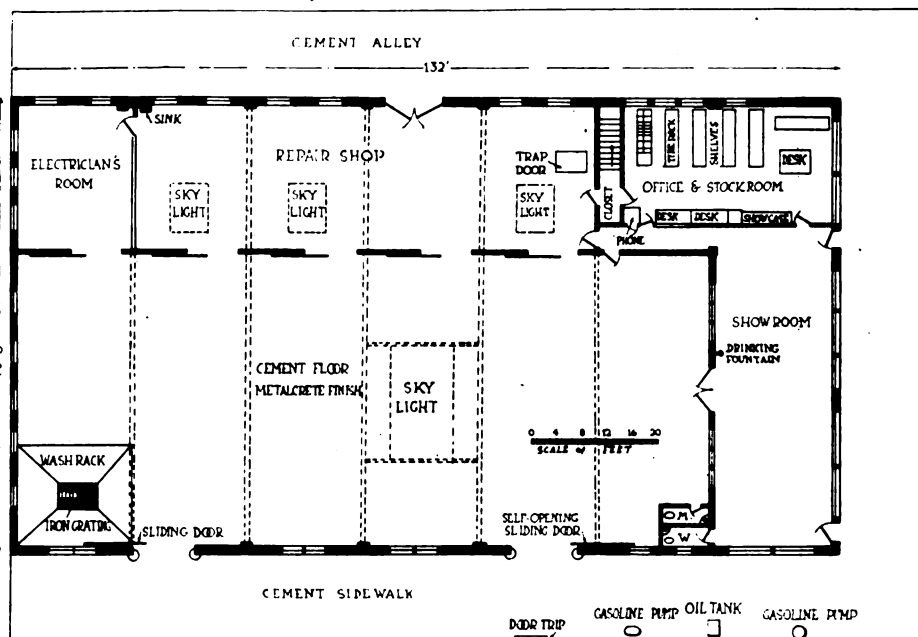
(Continued from page 13)

tailed mention. One is the rack arrangement for the shelving and handling of the accessory stock, which always is large and complete. As stated before, the office and accessory department are integral, the accessory racks occupying the major portion of the space allotted, with the office desks and parts show cases forming a part of the partition which separates the accessory room from the salesroom.

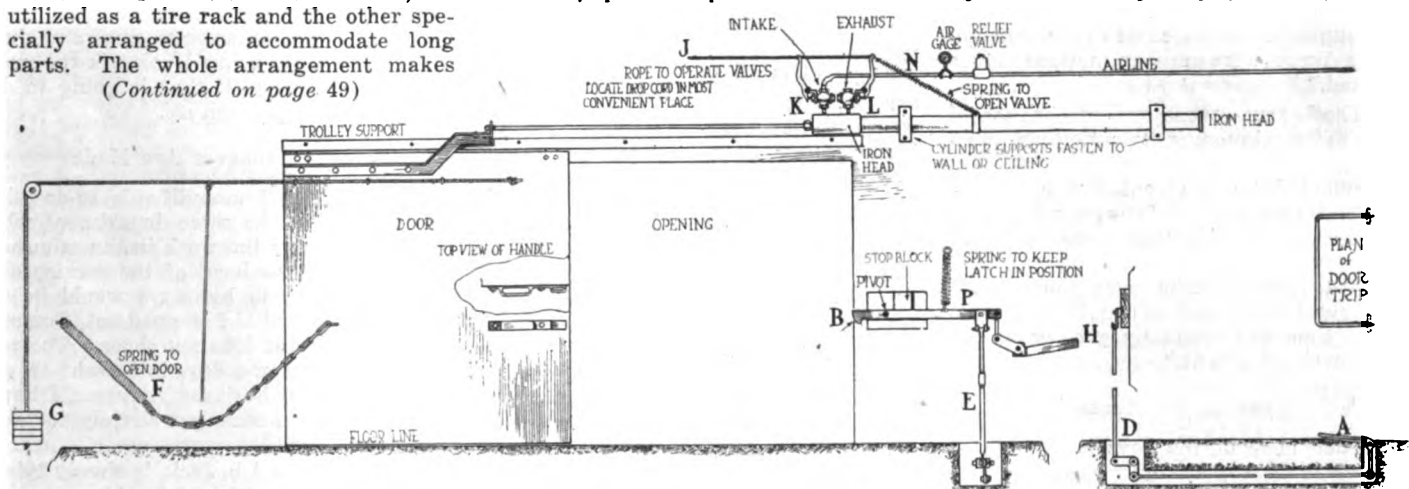
Three parallel racks and one at right angles, making four in all, each 9 ft. long, 2 ft. wide and 8 ft. high, with 8 shelves each, take care of the large supply of accessory parts constantly carried in stock. The feature of these racks is their large capacity and their accessibility, the arrangement being such that they can be approached on three sides. Everything is within easy reach of the salesman while no dark and hidden corners are permitted. One of the racks is fitted with bins for the accommodation of small parts.

In addition to these there are two other similar racks of the same dimensions, one utilized as a tire rack and the other specially arranged to accommodate long parts. The whole arrangement makes

(Continued on page 49)



Laying out the building is a simple matter. It is merely an economical arrangement of space. Compare this with the bird's-eye view at the beginning of the story



**Metklejohn's Automatic Door Opener:** To Open Door: Car passes over bar A—which moves bell crank D—pulls rod E—lifts latch B—door is drawn open by spring F and weights G, a quick start being given by spring F—cords keeps chain F from touching floor. To open door from inside handle H is used, the operator holding rod E to keep it from falling as hook on right hand end of latch goes down. To close door: Pull drop cord J—which opens air valve K and forces cylinder head to right by admitting air from air-line—when latch B catches door drop cord J is released—spring N closes intake valve K and opens exhaust valve L, allowing air to exhaust from cylinder when door is open again.

# Getting Ready to Go Up

By RAY W. SHERMAN

"**S**AY, Mister Reilly," blurted Jack the stockroom boy, "I'm feeling a bit sore."

"Well, well," said Reilly, with his best good-morning smile, "I'm sorry about that. What's happened?"

"It's that matter of the new job of accessory manager—equipment manager' I think you call it."

"Yes?"

"I would have liked that job," declared Jack. "I thought I was entitled to it—but apparently I wasn't. I've been here quite a while. I've always worked hard. I think my record is pretty good. I've handled the stock in good shape, I think you will admit, and then along comes this new job and you give it to a car salesman who hasn't been here half as long as I have."

C. J. Reilly, Inc., had just begun to promote and expand its automotive equipment department. There had been created an automotive equipment manager, whose duty it was to create a real retail department, to increase sales, to have charge of advertising, to help the dealers develop the idea in their own places, and to promote generally. The man who got the job was Simmons, who had been selling used cars for two years.

## More Than Service Counts

"H'm'm! I didn't know you wanted the job," said Reilly. "You never said anything about it, or indicated that you had any interest in it. I didn't even know you thought you could handle it."

"Well, I didn't say much of anything about it, but—but—I thought my service ought to entitle me to consideration when there were any promotions flying around."

"That's true—more or less—but who'd run the stockroom?" was Reilly's question.

"Who? Why, we could train one of the boys into that job," suggested Jack.

"But that would take time, wouldn't it?"

"Yes, it would take some time—but I thought I could sort of handle both jobs for a time and gradually get one of the boys worked into it."

## Knew it All Himself

"Then none of the boys is capable of it now? You're the only man who can handle the stockroom?"

"Yes," admitted Jack, "I'm the only man." And he seemed rather proud of that fact. "Handling the stock is quite a job. I've always looked after all the detail of it myself. I haven't felt that

I could trust anybody else with any of the work so long as you expected me to be responsible for it."

"And that," asserted Reilly, "is just why we couldn't make you manager of the new department!"

## Tied Self to Work

"What!" gasped Jack. "You couldn't give me a better job just because I was doing my best to run the job I had?"

"No, not that. You were not doing your best to run the job you had. You were simply keeping the job sewed up in your own hands, and you sewed it up so tight that when this new position came up it was going to take you too long to get loose from the job you had."

"Then you considered me for this job?"

"Certainly we did, Jack, and you nearly got it. But when we came to look into the matter we found that there was no one in the stockroom except yourself who really knew much about the stockroom. The other available man was Simmons. He had been handling the used cars, and doing well with it. You were both good men. But Simmons had a salesman out in his department who knew as much about the department as Simmons did, so all we had to do was shift Simmons to the new position, and everything in the used car department went on the same as usual. Once in a while Simmons will have to consult with the new used car manager when necessary, but he has shuffled that job off his shoulders like an old coat."

"Huh!" said Jack—and that's about all.

## Two Essentials to Promotion

"There are two things essential to promotion, Jack," explained Reilly. "One is knowing about the work to which you are going to be promoted, and the other is having your present job so organized that you can turn it over to some one else in a minute if you get a chance to step out of it. The first thing you had done fairly well—but so had Simmons. You were about fifty-fifty. Each of you had a knowledge of the accessory business, and I'm sure both of you have been studying sales and advertising and would have done well in promoting the new department, but when it came to the second half of the qualification Simmons had it over you like a tent. His department was so organized that he could drop dead and not hurt the business a great deal; whereas, if we moved you, we would have to go through the long process of breaking in a new man."

"I never thought of that," pleaded Jack.

"Some folks don't think of those

things," Reilly continued. "They are highly important, though. Some men don't have good understudies because they are jealous of their jobs. They act as though any one other than the manager of the department had no right to have information that didn't pertain to the jobs of those other than the manager. They assume an air of secrecy and importance, and won't let their helpers know anything about the correspondence or the policies of the department. They tell their helpers to obey orders and ask no questions."

## Afraid of His Job

"An attitude of this kind simply makes the helper a hired man. He never can develop. He couldn't become manager of the department without going through a course of training. Probaby one reason a manager of this kind doesn't want to teach his helpers is a sort of jealousy lest they get to know as much about the job as he does. He is afraid he might work himself out of his job."

"Well—wouldn't he?" interrupted Jack.

"Not in this shop," declared Reilly. "If he did, it would simply be because he worked himself into a better one. If a man is working in an establishment where it is the custom to fire the managers and give the work to the assistants simply because the assistant will do the work for a little less money, the manager might just as well begin looking for another job right away. And if he's going to do that, it's only fair that he get one of his helpers ready to take over the work. There is nothing particularly meritorious in leaving an employer flat. That is nothing except revenge, pure and simple, and it only helps develop in the man who does it a spirit that is going to do him harm all through life."

## How Managers Are Made

"If Tommy Trumbull quit to-day he has a man in the sales department who could take over the work in ten minutes. If Williams, the head of the service department, had to leave we would be in good shape; and if I stepped out, Tommy could step right into my shoes. The result is, that some day, if I want to go into additional business ventures, I have a good general manager already to take the job."

"Sewing up a job, Jack, is simply tying yourself down to that job. If you make it hard to be pried loose, it is your own fault. There are two essentials to a successful jump. One is a place to land, and the other—more important still—is a good place from which to start."



# All Keyed Up and No Tune to Play

*Are you  
meeting this  
Problem?*

*Tell us  
how*

## *Transportation Men are Ready for Truck Propaganda, But They Find Few Propagandists*

**W**HY don't motor truck dealers pass around more freely the words and music to the song "Motor Trucks Solve the Transportation Problem"?

There are, for instance, the transportation commissioners of scores of Chambers of Commerce all keyed up and no tune to play.

These transportation commissioners are railroad rate experts. Their business for years has been to see that local jobbers, manufacturers and merchants got a fair rate from the railroads. They haven't much railroad business now; but they have got a new job, which they are tackling with enthusiasm the job of helping to develop truck transportation.

And however well they may know how to go about it, they can't do the whole job themselves.

Here's one instance: A transportation commissioner who has been for thirty years a crank on good roads as a feeder to railroad business, jumped at the chance to work up some data on motor truck use around his town. He wrote to all the motor truck dealers—and got not one reply. Not yet discouraged, he wrote to several of the large industrial institutions who, it seemed obvious to him, must be getting or transmitting much of their freight by truck. Again he got not one reply.

Not yet discouraged, he took up personally with two or three of these people the matter of getting some records of goods or freight carried by truck—and they refused to warm up. They said maybe something might be done some day, but as long as they were getting along all right themselves they saw no reason for their own encouragement of truck use.

One of these industrial institutions was the Stock Yards Co. The transportation commissioner knew from his own visual observation that trucks were taking live stock to the yards. He knew from the

statistics he had gathered from the community that if one truck brought in two calves twice a week, there might just as well be a hundred trucks bringing in hogs and cattle every day of the week.

He knew too, from his controversies with the railroads and his acquaintance with the trade promotion work of the commerce club, that much of the truck-carried stuff would be what otherwise might go to some other city.

He knew as a transportation man and as a former live stock yards man that the stock yards company made money, and that the terminal handling of live stock that came in by truck was much easier.

He also knew that the stock arrived in better condition, at a time that could be calculated more closely, so that the farmer and the stock yards company as well as the commission men and the buyers would all be better pleased with the bargains they made if the stock was brought in by truck.

### Need Missionary Work

But he saw that a great deal of missionary work would have to be done not only on the stock yards company to get the data necessary for a campaign of motor truck promotion, but on the motor truck dealers themselves to get them to go after this business. It was not his place to do promotion work, and he did not have a taste for it. He had plenty of other work to attend to.

This transportation commissioner ran up against the same lassitude when he tackled the problem of return loads. He found that many jobbers were loading goods into the trucks of merchants—but the jobbers did not know whether the merchants brought goods in with them or not. There was no record anywhere of the men who actually used trucks in freight hauling between the towns—and nobody seemed to take enough interest in the matter to try to find out.

If this had happened in a small town, where there was little business, perhaps it might be considered an isolated case, but the same thing has happened in several towns—and in communities where there is a great deal of truck business to be developed. Some of these are communities where good roads projects are now under way but have been checked because the Government did not know that the roads were going to be actually used in important service.

There surely must be some way to get action in each community with reference to motor truck use on the highway. Wherever there is a motor car dealers' association, certainly there could be an active committee to cooperate with the commerce club and the transportation commissioner of this club.

Where there is no dealers' association, it would certainly be profitable for a few dealers to contribute the expenses for an investigation upon the basis of which all could go after business. The investigation could be reported to the commerce club or other local civic bodies in the community who could use it in exchange with other communities of the territory to develop the general conditions that might effect motor truck transportation.

*The first consideration in talking about motor truck transportation is to have information on what transportation already exists.*

The enthusiasm of commerce club men who want to back the Highway Transports Committee falls flat when some local grouch tells about some friend of his who failed in the truck business. Every community has plenty of examples of success—and these examples ought to be available to every person official or semi-official who has anything to do with the promotion of the motor transport idea.

Has your association such a committee?

# Educated His Customers to the Cash Basis

*Tom Botterill Did It in His \$200,000-a-year  
Business and Didn't Have Any Trouble Doing It*

**C**ASH basis for \$200,000 a year, and everybody happy. How's that?

While the new system has not yet run a whole year, it has worked out so excellently for 5 months in one of the largest and oldest motor concerns in Denver that the veteran proprietor declares it an unqualified success; and his volume of business in service and parts alone amounts to \$200,000 yearly. This is Tom Botterill, Pierce and Hudson distributor in Colorado and adjacent territory and Dodge dealer in Denver and vicinity.

## Education is Necessary

To handle efficiently such a change of system in an established business requires careful educating of customers before making the change, according to Botterill. This means, in keeping with his habit of superthoroughness, explaining your views of the question and your reasons for considering the new plan, urging them to feel free to lay their views before you, offer any suggestions they may have, and even to voice their objections if they have any.

In short, the dealer will gain by taking his customers into his confidence and making them understand that he is working for their interests along with his own. And when a big volume of business and a large number of customers are involved, Botterill believes in *taking plenty of time to make sure of the right results.*

So he started his campaign of education nearly a month before he finally adopted the cash basis. He began with a letter—No. 1—showing how the cash basis would enable him to keep down costs to his customers and asking for their frank opinions. Two weeks later, he

wrote Letter No. 2 that a number of customers had responded in favor of the plan, explained further the value of reducing expenses of bookkeeping and financing; assured them that he was still of open mind and asked for further ideas.

Then he waited nearly a month before announcing in No. 3 that the new system would go into effect about ten days later, on Oct. 1. He then told more about the detailed arrangement for payment by cash or check, for immediate investigation and adjustment of any claims of error, with cash refund where due, etc.

After two days' trial, Botterill again wrote his customers—No. 4—telling them how and why the cash basis was giving satisfaction, assuring them that every effort would be made to save them inconvenience if any misunderstanding should arise and asking them to be sure to call on him personally if at all necessary.

"And now, with the plan working surprisingly well during these five months and improving all the time," says Botterill, "customers declare they would object to returning to the account basis, and wonder why we didn't make the change sooner."

"They see that we couldn't afford to pay mechanics as high as sixty-five cents an hour, in some cases, and then charge the customer only a dollar an hour on the charge account method. And the average customer would prefer to pay \$1 cash than \$1.25 on time, which is the price we would have to charge per hour for labor to keep from losing money."

## Reducing Operating Expense

"I don't expect to make a profit on labor and parts while the war lasts, but I don't want to lose money if I can help it; and I believe it is good business all around to save money for my customers by reducing operating expenses in such a practical way as the cash basis provides.

"Some say that the cash basis is more than sound business, that it is patriotism. All right, put me down in support of the kind of efficient economy our government calls for, if you want to and hand the praise for being patriotic to my custom-

ers for their admirable co-operation in this business step. And you can go as far as you like in telling that I am FOR the cash basis—\$200,000 strong."

## Letter No. 1

*YOU AND I ARE COMING FACE TO  
FACE WITH A PROBLEM THAT  
IS A LITTLE SERIOUS.  
CAN'T WE WORK IT  
OUT TOGETHER?*

All costs are rising. We all know that only too well.

I am sitting on the lid of this business just as tightly as I can, but it looks as though we might be compelled to increase our charge for labor on cars. It is a cold fact that we are losing money now on every labor job that goes out of the house.

The problem is one of economy. How can we make your work cost you as little as possible? We have no notion of making a profit; we simply wish to avoid the very dangerous course of suffering a steady loss in our shop and service station.

The first thing to do seems to be to cut expense wherever possible.

And one item of expense that seems to be of no value to you intrinsically is that of accounting and financing.

If we can reduce the amount of bookkeeping and the amount of outstanding accounts we can cut just that much off of the expense to you, the customer.

It was suggested to us sometime ago by a customer who is a very experienced business man that there would be economy in putting our charges for labor and parts on a cash basis—in other words to be paid for at the time of delivery instead of being carried on open account with bills rendered at the end of the month.

At first we did not like the idea, because we thought that cash payment might be an inconvenience.

But the more we think it over and examine the circumstances the clearer it

## Letter No. 1 Continued

becomes that there would be an elimination of expense to the customer and not nearly as much inconvenience as we had at first supposed.

If we could save the work of entering the charges on our books, making out statements, mailing them, and then entering the credits, we could certainly lessen the amounts of our overhead charges.

Also we could lessen the interest we have to pay the banks at seven per cent if we could reduce the amount of outstanding charges for parts and labor that we have to pay for with cash.

The question resolves itself simply into this: Would you rather pay cash than pay for the extra work by our bookkeepers and the extra item of interest on the money invested?

The original memorandum of the work and parts is made out in the shop or service station at the time they are furnished. If you took this memorandum and paid either with cash or check on the spot, the expense of bookkeeping and the interest on the investment would be very largely eliminated and your bill lessened that much.

We could have blank checks on every bank available right at the service station and the receipted memorandum would be your receipted bill.

Would this inconvenience you at all seriously: and if it is to hold down the cost to you, wouldn't you rather do it?

This is the question we are considering and on which we would be glad to have your suggestion if any occur to you.

It is not a measure of protection against losses for our losses on accounts amount to practically nothing. It is simply a possible means of cutting out items of expense that really do no one any good.

## Letter No. 2

**IN FURTHER REFERENCE TO THE  
CASH BASIS PLAN FOR HOLD-  
ING DOWN THE COST OF  
LABOR, PARTS AND  
ACCESSORIES**

Since I mailed my first letter of inquiry in reference to this matter ten days ago, a number of customers have been kind enough to give me their ideas.

It seems the unanimous opinion that this is the time to eliminate every useless expense possible and nearly everyone who has talked with us has been favorable to the plan mentioned.

The only question raised at all frequently was that of convenience under unusual circumstances.

For example: How would payment be handled in case the customer did not feel certain about some of the items on a memorandum? The course to be pursued in a case of this kind would be to make an investigation immediately and settle all doubts on the spot; or, if this would not be convenient to the customer, pay the bill and let us reimburse him (the

## THIS PLAN WILL WORK

*Tom Botterill is one of the  
ablest merchandisers in the  
motor car industry.*

*He places his stamp of ap-  
proval on the*

## CASH BASIS PLAN

customer) if later investigation showed a charge that should not have been made. We would really much prefer to adjust claims immediately instead of after thirty days as it is so much easier to get a complete record of the circumstances while they are still fresh in the customer's mind and in ours.

Another point raised was as to what could be done when the customer has a secretary who attends to drawing the checks in payment of his personal bills, or in cases where the customers happen to have neither cash in pocket nor a checking account at a bank. Probably to meet such conditions as these we would have to prepare some small acknowledgment form that the customer or his secretary could take up the next day without the charge being entered on the books at all. This form could perhaps remain with the clerk in the service station, serving as his explanation of the deficiency in the cash for that day, he and the customer to handle it as a purely temporary arrangement, involving no work in the main accounting department.

This form could serve also in cases where a member of the family or a chauffeur called for an owner's car without cash or check with which to pay; in such cases, the telephone number of the owner could be taken, verification of the charge (with any explanations that he might want) be reported to him immediately by telephone by the service clerk, and he could send either cash or check at any time during the first twenty-four hours, a mailed check reaching us in time.

The only other questions raised were concerning cases that almost never occur and the general plan seemed to be so generally approved as to indicate that it would not only be satisfactory but even popular.

There is undoubtedly a strong sentiment in favor of eliminating the expenses of bookkeeping and financing, and I appreciate the readiness with which my position in the matter was understood.

I am still of an entirely open mind, and if any customer foresees inconvenience or dissatisfaction, I will sincerely appreciate his letting me know. If no other objections are received from our customers, I will be inclined to assume that a trial of the plan is favored.

## Letter No. 3

**THE PLAN OF PUTTING OUR  
CHARGES FOR LABOR, PARTS  
AND ACCESSORIES ON A  
CASH-OR-CHECK BASIS  
WILL BE ADOPTED**

I have written two letters to all customers in reference to putting our stock room and service station on a cash-or-check basis as a means of helping to hold down rising costs to the car owner, and every reply received has favored the adoption of the plan.

From this I infer that our customers would like to have the experiment tried.

Accordingly we shall adopt the plan beginning Oct. 1, 1917. Thereafter, all labor, parts or accessories not covered by the original car guaranty will be expected to be paid for by cash or check at the time of delivery. A cashier will be established at the main entrance to the service station and blank checks provided at a desk there.

I am arranging to have this new system handled in such a way that it will be not only an economy to the customer but more convenient than the present system.

A complete memorandum will be ready at the time the car is called for and if there is any item that needs explanation, such explanation will be given fully at once. Or, if for any reason the customer wants to withhold approval of any item, he can pay the bill in full and as soon as investigation can be made, our check will be sent him for any items that have been found incorrect. In other words we will correct errors by check instead of entering credit on account.

We may be a little awkward with the new system the first few days, but we are planning it as carefully as possible and hope to have it smooth-working by the end of the first week. If it will keep down labor costs, for owners and make proper adjustment of claims easier, I will be only too glad to continue it beyond the experimental period.

## Letter No. 4

**THE NEW CASH-OR-CHECK SYS-  
TEM SEEMS TO BE GIVING  
VERY GOOD SATISFACTION**

After two days' experience with our new cash-or-check system of settlement for labor, parts and accessories, we are led to believe that our customers are more than pleased with it.

It has enabled them to dispose of all questions as to charges at the time they call for their cars and resulted in a prompter service in every way.

We are still trying to improve it, however, and if you have any suggestion for its betterment at any time, they will be most welcome.

One point I wish particularly to emphasize is that every employee connected with this work in any way has been definitely instructed to avoid inconveniencing any customer who may have forgotten that this new plan is now in effect; if you have any trouble with it at any time, please call me personally, or Mr. McIntosh in my absence.

# SCIENTIFIC CONSTRUCTION

GARAGE

SHOWROOMS

REPAIRSHOPS

We shall be glad to draw a plan for you or give you any other aid in your building, free of charge. But be sure to send full details, including a sketch of the plot, showing position of streets

## Plan For 60 x 100 Plot

Editor Motor World: I had the misfortune to have my wood garage at Grundy Center, Iowa, burn up; not only that, but I had 10 cars and a stock of tires and parts go up in smoke. Above insurance I had fully a \$10,000 loss. It hurt me badly financially.

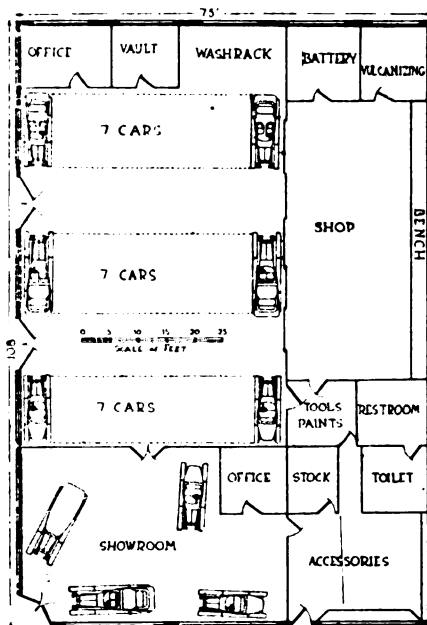
I am writing to ask if you will kindly help me get up a set of plans for a new building. I enclose a rough sketch of the location for your guidance. This corner is, I believe, the best corner in the town.

It is on the north side of the main street facing south and west. Across the street west is a two-story brick theater. On the south side of the street is the court house square, across the street south from the theater is the hotel. My lot is considered worth \$5,000, size 60 x 100, north and south.

I would very much like to have your drawing on a one and two-story building with basement under the south 30 ft. I rather think that one story would be what I will likely figure on building. In drawing the plans do not draw it for a showroom and garage purpose only for it might have a chance to be used for something else later.—O. A. Ontjes, Holland, Iowa.

Here is a plan which has been drawn very carefully according to the information you have given.

The logical place for the shop is across the back of the building and we have placed it there. However, it is quite possible that the shop is too large for your requirements.



*This is a plan for converting a mercantile building into a garage with the minimum alteration*

Likewise we are not certain whether the showroom and accessory store are just what you want. The difficulty is that the width of your plot is not well adapted to the best layout for a small town business, nevertheless if you will tell us in what particulars this plan does not meet your needs we are quite sure

that with this additional information we can draw another which will be much more satisfactory.

It is impossible for us to estimate the cost of this building to you since this depends largely on local conditions of which we have no knowledge. Any local builder or architect can give you a much more accurate estimate of the cost of this building than we could make at this distance.

## Converting a Building

Editor Motor World: We have purchased a mercantile building and wish to convert it into a garage. I inclose ground-floor plan of same, and wish to get your idea of how best to change this into an up-to-date garage and where you would locate each of the following: Machine shop, tire vulcanizer, battery repair shop, accessory department, new car sales room, office, toilet, rest room, etc., with the least possible expense. It is a brick building with concrete floor.—Mutual Warehouse Co., Welsh, La.

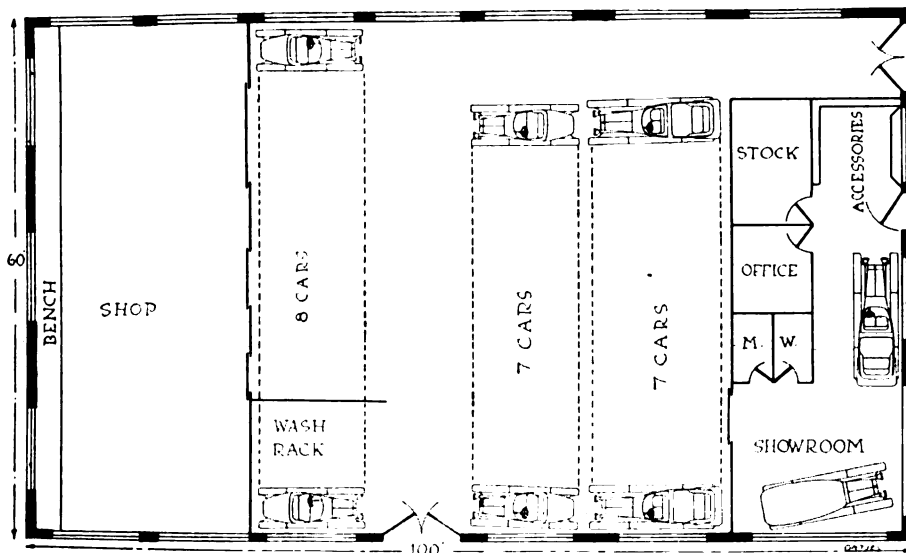
Here is the best plan that can be worked out without making rather extensive alterations. The only changes that have been made in the building as it now exists are the removal of the rear partition extending across the building and the closure of the two doors on the alley side. The forward partition has been used as a wall between the showroom and the rest of the building. The toilet, rear office and vault have been left intact.

Since you are located in a small town it is doubtful whether you will want quite as large a showroom or accessory store as this plan allows, but this is the best that can be done without removing the front partition. For the same reason the entrances to the garage are awkwardly placed and consequently the space cannot be used to best advantage.

## Rural Express Line for Omaha

OMAHA, July 20—The Ford Livery Co. has purchased three trucks to act as forerunners to a fleet of between forty and sixty to be put in service shortly. These trucks will operate over routes in and out of Omaha, hauling freight both ways.

*Let Us Help You  
With Your Plans*



*For a plot 60 x 100, this arrangement appears to work out very well*



# Stocking Accessories

*By Know  
and Not  
By Guess*

**T**HE River of Automotive Equipment—which is what we all called accessories until the Hot Springs meeting of the jobbers—is a strange stream.

The manufacturer—who is the source—tries to be as prolific as possible. He wants to produce a maximum in order to supply demands and make money for himself.

The jobber wants to distribute as much as possible in order to make profit for himself.

The dealer—who is the supplyman, generally the garageman and sometimes the car dealer—wants to make money out of this equipment.

The consumer—the owner of cars and other automotive apparatus—is the great ocean into which this river flows.

But the river isn't a well engineered and smoothly flowing stream. It needs dredging, straightening and governing by some keen thinking automotive sales engineers.

All along this river are little eddies in which all sorts of things accumulate. Sometimes there is a real jam at a restricted spot, and, while the buying ocean is big and wide and capable of absorbing untold quantities, there is uncertainty and restriction along the course which slows up the whole stream.

It is possible to fix this river so it will run right—the way it should. It can be done by an intensive study of supply and demand of sales possibilities and of methods for increasing the flow in certain places.

The manufacturer and jobber both think they study this question—but after they are all through they often haven't done very much, because they may study their heads off and they have achieved nothing unless they find out how to increase the flow down close to the ocean—where the dealer is. No matter how big and broad the river may be it can't flow unless its mouth is wide. It might be wider.

The dealer isn't always capable of studying his own situation. Sometimes he is, but not always.

At present the dealer too often buys stock on the recommendations of the jobbers' salesman, and too often the salesman sells goods when there is no real comprehension in the mind of either himself or the dealer as to how they are to be moved.

One of the central engineering points that will help the situation is a budget of buying. Instead of buying by guess and by the salesman's oratory the dealer should buy goods just as a good business

house makes up its expenses for the year. The dealers should be able to sit down now and figure quite closely what he will need during the next following normal year and at what periods of the year he will need various quantities of the total.

But how is a dealer to know this? The answer isn't difficult. One of the important things to know is past performance. If a dealer sells 1000 spark plugs in a normal year it is safe to assume he will equal that figure at least, and unless the situation is changed by such factors as our present abnormal situation, the entrance of new competitors, higher prices, or unusual times, it should be safe to advance the figure somewhat.

And here again past performance enters into the situation, because, by comparing years, the dealer can estimate quite accurately the percentage by which his business will increase each year.

Also, a study of the sales records will show during which months the goods sold. If 500 of the 1000 plugs sold between June 1 and Sept. 1 the dealer should plan to have an adequate supply on hand by June 1, and should NOT have an abnormal stock when he doesn't need it.

All this necessitates that a dealer keep accounting and sales records, and no dealer should be classed as a real dealer unless he has those records. Until he has them he is simply a hanger-on in the industry.

With records of this kind and careful estimates the dealer can assure himself of an adequate stock and can largely avoid over-stocks. He should then go into the matter of increasing his orders without waiting for the jobbers' salesman to bring the matter up. Furthermore, no increase in orders should be made unless there is a reasonable prospect of the goods being moved.

A foundation like this will enable the dealer to increase his business systematically. If he plans an enlarged advertising campaign he may feel safe in increasing all along the line proportionately. If he chooses he may select certain articles and plan in advance campaigns for moving them.

But in all cases of this kind there should be DEFINITENESS in the plan. The dealer should not merely imagine he is going to sell more of a certain article; he should KNOW beforehand how he is going to sell it. Then he can feel safe in buying.

If times are normal and shipping is in good condition the dealer may even divide his order, taking half at the beginning of the summer and the other half at a

period when his figures tell him the first half will be nearly sold. He should, however, play safe and avoid an "out of stock" condition.

There then enters the over-stock factor. There probably isn't a business house in the country that isn't more or less over-stocked on at least one article. Some automotive equipment dealers have been badly over-stocked by the pressure of salesmen—and this is largely because the dealer didn't KNOW and listened to the salesmen, who also didn't know and SOMETIMES didn't care.

Over-stocks are of two kinds—staple goods and lemons. In case a dealer, despite all his figuring, finds that he has an overstock he should first make an effort to get out from under without disturbing trade. If the goods are staples and worth holding he isn't so badly off, but if he has bought some doubtful specialty his position is less desirable.

In the latter case he should first ask the jobber if he wants any of the goods back. Next, he should ask his competitors if they care for any of the goods, at, say, 5 per cent for holding and handling.

In case no one wants the goods the chances are they are not an important factor in trade and no one will be greatly harmed if he reduces the price and converts the goods into cash. It is unwise to let lemon specialties keep cash tied up. They probably will always be a slow mover and might better be cleaned out now and the money put to work.

All of this has laid out a plan for the dealer, but since the dealer and the jobber and the manufacturer are so close together in this River of Automotive Equipment where do they all enter in?

The salesman of the jobber and the jobber's sales manager enter in strongly. The jobber should be able to aid the dealer in this budget buying. Investigations should be made, the jobber should instruct the salesmen, and the salesmen should be able to instruct the dealer. Instead of talking merely of goods and buying terms the jobber's salesman should talk selling and selling plans. He should have sample budgets for dealers and towns of certain sizes, and should be able to be a real sales counselor.

Under the present plan the River of Automotive Equipment is capable of an enormous flow but its mouth is restricted. It is to everyone's advantage to increase the flow, wherefore everyone should begin a study of automotive sales engineering and start work first down close to the ocean.

The editor of this department is glad to answer questions. In sending queries, always include copies of contracts, notes, etc., to which you refer.

# THE LAW

By George F. Kaiser

As It Applies to  
Dealers  
Repairmen  
Garagemen

## Mechanic's Contract

Editor Motor World: I have a question I desire answered as it is causing considerable discussion here:

We have six men employed in our shop where I am employed and each works by yearly contract from January to January.

We have one man who desires to join the army and one who has a position offered him paying about \$15 more than his contract calls for, but the firm will not cancel either contract on account of scarcity of mechanical help.

### Form of Contract

The contract reads as follows: "This agreement made this 1st day of January, 1918, between the \_\_\_\_\_ Auto Co. of \_\_\_\_\_ County, State of Iowa, party of first part, and John Doe, party of the second part. Said John Doe agrees faithfully and diligently to work as battery repairman and salesman for the aforesaid \_\_\_\_\_ Auto Co. for and during the space of time elapsing between Jan. 1, 1918, to Jan. 1, 1919, providing both leave such a length of time without absents himself from his occupation. During which time, he the said John Doe will carefully perform all duties as battery repairman and salesman in all respects as directed by said \_\_\_\_\_ Auto Co. In consideration of which services so to be rendered by said John Doe, said \_\_\_\_\_ Auto Co. agrees to pay said John Doe the sum of \$25.38 per week, each payment to be made the end of each week. Also said \_\_\_\_\_ Auto Co. agrees to pay said John Doe a 5 per cent commission on the total amount of the sales of the first one hundred and twenty (120) Prest-O-Lite Storage Batteries sold during the period between Jan. 1, 1918, and Jan. 1, 1919. Commission payable Aug. 1, 1918, and Jan. 1, 1919."

### Pay For Time Off?

According to this contract John Doe is to receive \$25.38 each week during the year regardless of whether he is off on holidays or an occasional day in the week, is he not? If they deduct pay for holidays and the occasional day he may be off of duty can he collect it?

The house called him on Sundays and after regular shop hours several times and he has worked considerable overtime at times from 30 minutes to two hours; can he collect for this?

On account of help shortage and he

being a good mechanic the house has him repairing radiators and different work on automobiles, in one-third of the time he is asked to help in the shop.

Is this a violation of contract on work of firm?

Can they hold him responsible if he quits on a two weeks' notice?

They refuse to raise his salary as he contracted at the figures in contract, but has an offer of \$15 more per week.

Advise me at once just what he can do and what you would advise.—C. E. Baird, Perry, Iowa.

A contract is a contract, and if a man who has made a contract to work for a concern for a certain time goes to another firm for a larger salary he certainly is guilty of breach of contract. However, this page is not the proper place for a decision in a case of this kind. If the employee is dissatisfied he should consult local counsel regarding his rights if he does not wish to live up to his contract.

## City Can Regulate Gas Stations

Gasoline stations have at last attracted the attention of the courts. In a recent Idaho case it was decided that a city may revoke a permit to erect a gasoline station in a public street whenever it so desires because permission given to erect one is a mere license revokable at will when there is no statute which authorizes the city to permit the erection of such stations.

Suit was started by the proprietor of a gasoline station for an injunction to prevent a city from removing a gasoline station by force. It appeared that he had procured permission of the city council to erect it and that the council had passed a formal resolution giving him the right to do so. The council thereafter changed its mind and revoked the permission which it had given. The court denied the application for injunction and decided that the city council was justified in what it had done.

In only one other case does the matter of gasoline stations appear to have come before the courts. That was in a Louisiana case where it was held that the state legislature had the right to confer authority on a city to grant a permit to install a gasoline station in a street and that the city might require the payment of a fee by applicants and might make reasonable rules and regulations concerning such stations.

## More Liability Data

A case dealing with the proposition of when an employer is not liable for the negligence of the driver of a demonstrating car recently came up in the New York courts. Suit was brought against the dealer to recover damages for injuries caused through the negligence of a chauffeur who struck and injured a pedestrian.

It appeared that the dealer had a manufacturing plant in one part of the city and had a sales department which was called a "downtown garage" in another part. It also appeared that the dealer's sales manager was an invalid who could walk only with difficulty and that it was the custom of chauffeurs of demonstrating cars to take him from his home to the downtown garage and to bring him back in the evening.

On the evening of the accident the chauffeur of a demonstrating car took the sales manager home and while following out the direction of the sales manager to take his wife's seamstress to her home he ran down and injured a pedestrian.

The court decided that the dealer was not responsible for the injury because the chauffeur was not engaged in the dealer's business at the time of the accident but was engaged on a personal errand of the sales manager at the time the injuries were sustained.

### No Right to Unreasonable Parking

It is well understood that motorists have no right to leave their motor cars standing on a public street for an unreasonable length of time. This has been decided time and again in the courts even though provisions in city ordinances relate only to leaving cars within a certain distance of fire hydrants or with machinery in motion, etc.

While this matter is usually regulated by ordinance, a motorist has not the right to leave his car for an unreasonable length of time even when there is no ordinance.

The above is also true as regards leaving cars standing in front of a garage or repairshop for the purpose of repairing it. Oftentimes after violations of this kind have been disregarded for years the police suddenly become active and take all those guilty of violations into custody. This is true of New York City, by way of illustration, where the ordinances against parking and repairing are now being strictly enforced.

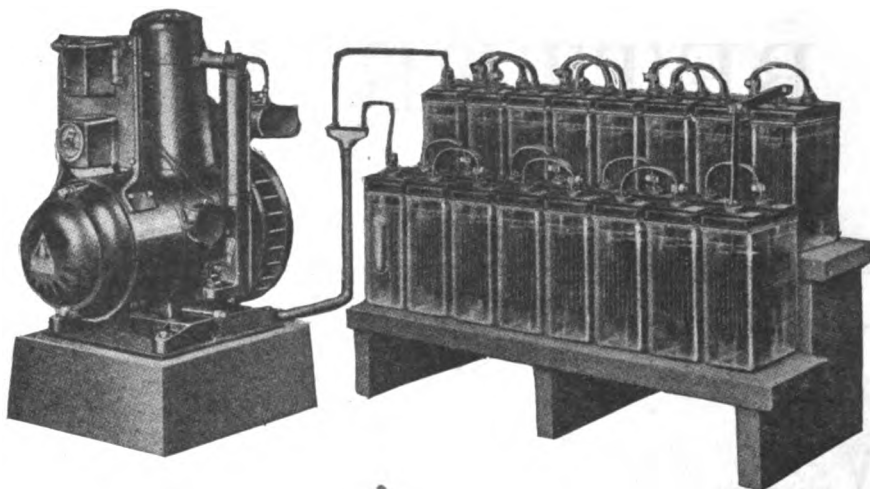
# Delco Electric Farm Lighting System

**DELCO-LITE** is a farm light and power plant consisting of an engine, generator, switchboard and set of batteries, and is manufactured by the Domestic Engineering Co., Dayton. It is made in several sizes, the most useful on farms being  $\frac{1}{2}$  and 3 kw. The  $\frac{1}{2}$  kw. set is furnished with 16 cells of 80 ampere-hour battery for \$395 or with the same number of cells of 160 ampere-hour capacity for \$465. The 3-kw. outfit has 16 cells of 160 ampere-hour capacity and sells for \$875. Each of these systems operates at 32 volts and will run a motor of  $\frac{1}{2}$  hp., but most farm work can be done with a 1/6-hp. motor.

The engine and generator are in one unit, an extension of the crankshaft forming the armature shaft. This also enables the engine to be started by the generator. When it becomes necessary to recharge the battery the engine is started by pressing the starting switch on the switchboard. This electrically cranks the engine, using current from the batteries, and the engine runs the generator till the battery is charged, then it automatically stops.

## Engine Air-Cooled

The engine is air cooled, the cylinder having vertical fins and being surrounded by a sheet metal housing. A sirocco fan in the flywheel blows air through the housing and around the fans. The four cycle principle is employed, using overhead valves. The spark plug is in the side of the cylinder head, the terminal coming through the housing. Current for ignition is taken from a coil. Hyatt roller bearings are used on the flywheel end of the crankshaft and New Departure on the generator end. The crankshaft is counterbalanced, the connecting rod is of extra length, and the piston is of aluminum with three rings and two grooves.



*The Delco plant is a complete electric lighting equipment for the farm*

Kerosene is used for fuel, but starting is on gasoline contained in a small auxiliary tank. If desired, gasoline or city gas can be used regularly for fuel. Lubrication is effected by a splash system, making use of a rapidly revolving gear to carry a fine spray of oil to all moving parts.

The switchboard is mounted on the generator housing and has a starting and stopping switch and an ampere-hour meter. Two leads from the top of the switchboard go to the battery and the other two go to the lighting and power circuits.

## Battery

The battery has thick plates protected by wood and rubber separators. The jars are glass so that the level of the electrolyte can be easily seen and water added as the level gets low. One cell, called the pilot cell, has an extension on one side of the jar containing a white ball which acts as a high and low hydrometer.

When the ball floats, the battery is fully charged, and when the battery is two-thirds empty, the ball sinks. This is a signal to start the engine.

## Dealer Helps

A very complete system of co-operation is extended to the dealer in Delco-Lite. Illustrations of all kinds of fixtures, motors and power installations are contained in an album with thumb indexes so that the subjects of light, power, advantages, plant, battery and miscellaneous can be turned to.

A service manual gives exhaustive information regarding all parts of the plant and the accessories that are used with it. A very large assortment of advertisements has been prepared in electrotype form for use in local papers, and these are supplied at nominal prices to cover postage. Other sales helps are lantern slides and booklets with the dealer's name.

## How to Paint Shingled Roofs

**O**N the tight-against-the-weather quality of your roof depends, in great measure, the enjoyment of your home.

Many people enjoy the artistic quality of shingles but fear the discomfort of a leaky roof.

One sure way to get the maximum service from a shingle roof which is just "going on" is to specify that all shingles be dipped or otherwise treated with at least two coats of creosote shingle stain.

On the other hand, if your shingles were stained when originally put on and are beginning to fade to a weather-beaten and faded-out appearance apply one or two coats of creosote shingle stain of the same color.

Creosote alone will not make a good shingle stain, although experts on wood-texture are agreed that as a protective and preservative on shingles it is second

to none on account of its quality of penetrating the grain of the wood and also because it has extremely slow drying properties.

To be satisfactory in appearance it must be colored. Colors which are permanent are the ingredients which must be dependable in quality in order to beautify your roof. The mellow, soft tones of creosote stains for shingles blend with sky and foliage and lawns, relieving at once the garish newness of freshly shingled roofs and siding.

For new structures one coating of creosote stain should be applied by dipping, and an additional coat applied with a brush after the shingles are laid. Where shingles are not dipped they should always have two brush coats, and for this it requires approximately one gallon for every 100 sq. ft.

On old structures two coats should be brushed in but it is not desirable to attempt to change the color which was formerly applied as stain. If you wish to change the color use paint. The original stain will still form a satisfactory protection while the paint will give the new color which is required. The spreading capacity of any paint or stain is very materially decreased on shingles on account of their being exceptionally porous.

Old shingles not previously treated will need two coats of a dark stain. Light stain cannot be successfully used on shingles darkened with long exposure to the weather. To dip and single coat new shingles requires 1 1/3 gal. stain per 100 sq. ft. To single coat laid shingles (brushed on) requires 2/3 gal. per 100 sq. ft.

*A Department of*

# BETTER MECHANICS

No. 75

## Cylinder, Piston and Crankshaft Lapping

WHERE cylinders are cut, scored or slightly out of round they can be brought back to a true round surface by lapping. If the cylinder is .01 in. or more out of round, lapping had better not be attempted, as a satisfactory job can only be obtained by grinding or re boring.

The most used method of lapping out a cylinder consists in cutting a spiral slot all the way through an old piston which is a little larger than the cylinder which is to be lapped, but which when compressed will go into the cylinder and the spring of the iron will expand the parts of the piston against the wall.

This is worked up and down in the cylinder with a twisting movement, using ground glass and oil for the grinding compound.

This works very well on cylinders with detachable heads where the piston can be run right through, but unless the mechanic is careful to push it down all the way on each stroke more material will be removed from the bottom than from the top.

### Cylinder-Lapping Tool

A very much improved form of lapping tool which insures even lapping of the full length of the cylinder is made up of three copper sections which form the lapping surfaces and hold the grinding compound. These sections are held apart a definite distance with circular wedges which are adjustable by means of two screws on the top.

Turning the screws down expands the sections and turning them up allows the sections to come closer together. The shank of the lapper is fitted with a Morse taper head which fits into the spindle of the drill press. The cylinder block is bolted to the face plate or table and the lapper put in the spindle.

The cylinder block is then moved about till the lapper slides into the cylinder in perfect alignment, and the table is then clamped. Dropping the lapper down till it is just within the cylinder, the adjusting bolts are turned down till the copper sections press against the cylinder walls with sufficient force to cause a reasonable amount of drag, but not enough to stop the drill.

The locknut on top of the lapper is

By J. HOWARD PILE

then clamped down tight to hold the sections in this position and take the strain off the adjusting bolts. The lapper equalizes itself so that it is the same size top and bottom.

Raise the lapper and apply a mixture of ground glass and oil and start the

drill going at a moderate speed, moving the feed lever up and down slowly and steadily the full length of the cylinder bore.

When the lapper begins to turn too easy stop the drill, loosen the locknut and tighten the adjusting nuts a little, set up the locknut and repeat the operation.

The number of times that the lapper will have to be expanded will depend on the amount that is to be taken out of the cylinder.

For very light scratches once is sufficient. For heavy scores and oval cylinders three or four expansions may be necessary.

It is best to remove the lapper, wash out the cylinder, examine the cylinder walls to see if the entire wall is being touched, and test with an inside micrometer.

When the cylinder is lapped true a thorough washing in gasoline or kerosene is advised.

### Renewable Sections

The copper sections of the lapper will wear out as time goes on, and they can be replaced. This tool was designed several years ago by P. W. Alexander, of the Hudson Motor Car Co. of New York, and has been used ever since in the Hudson service station. The other tools described in this article are also used by the same service station.

To make a good job, new oversize pistons should be fitted to the cylinders which have been lapped out as described above because with the use of the lapper the cylinder is lapped perfectly true and round, provided, of course, that the work has been carefully done. It is folly therefore to decrease the efficiency of the engine by using the old pistons with new rings or any other make-shift method.

If the pistons are so large that they will not enter the cylinder at all, they will have to be turned down a little in the lathe.

They should just enter the bore and slide in with difficulty. In Fig. 2 is shown a device for lapping the pistons in. It is made from an old yoke with square block for a universal joint and a strap-iron connecting rod. A wooden wrist pin is used so that the cylinder will

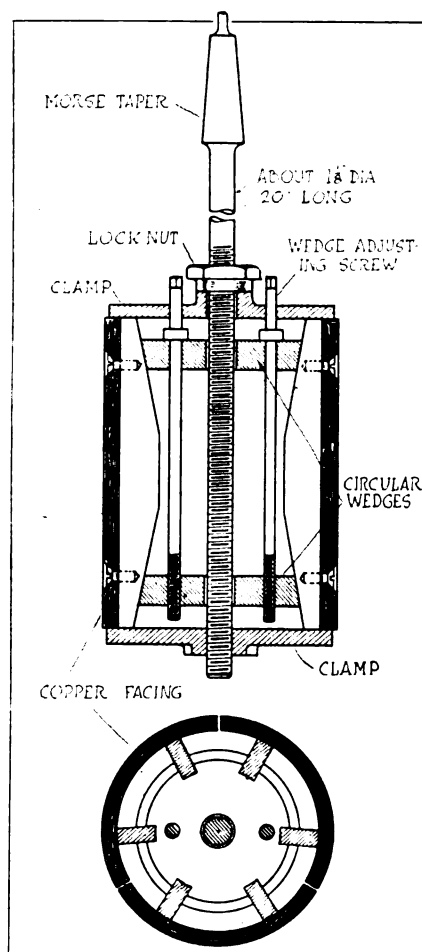


Fig. 1—Cylinder lapper that is adjustable for diameter, by means of the screws on top, the locknut clamping the copper sides in this position



not be scored if the wrist pin comes out and touches the walls.

The hole where the wrist pin goes through the connecting rod should be very loose, and this combined with the action of the universal joint at the top allows the piston to seat itself and not be forced into any different position than it will assume when the engine is assembled.

The shank of the device has a Morse taper the same as the cylinder lapper, and is operated by the drill press in the same way, moving the piston through the complete length of the bore with slow, steady motions.

#### Piston Lapping

As the cylinder has already been lapped, a very slight amount of lapping will usually seat the piston. It is correctly lapped when the piston can be moved the full length of the bore and turned in any position with a slight amount of friction and with no tendency to stick or push harder at any one point than another.

Both the cylinder and piston lapping can be done by hand instead of in the drill press if desired, and for this purpose a stout cross handle is fitted instead of the Morse taper shank.

When lapping by hand it will be found easier if the cylinder block is clamped on the bench with the cylinders horizontal. If the block is not removed from the engine and the engine is in the car, the workman stands with one foot on each hood board, straddling the engine.

#### Crankshaft Lapping

Where crankshaft bearings and throws are scored and cut to a depth not greater than .01, they can be trued up with the lapper shown in Fig. 3. This is made of cast brass with a pipe handle.

The part that fits around the shaft is lined with lead, and when the lead wears out new lead can be poured in the same way that a babbit bearing is poured.

The screw clamp regulates the tension and the hinge enables the lapper to be put around the shaft or removed when the hand screw is unscrewed all the way.

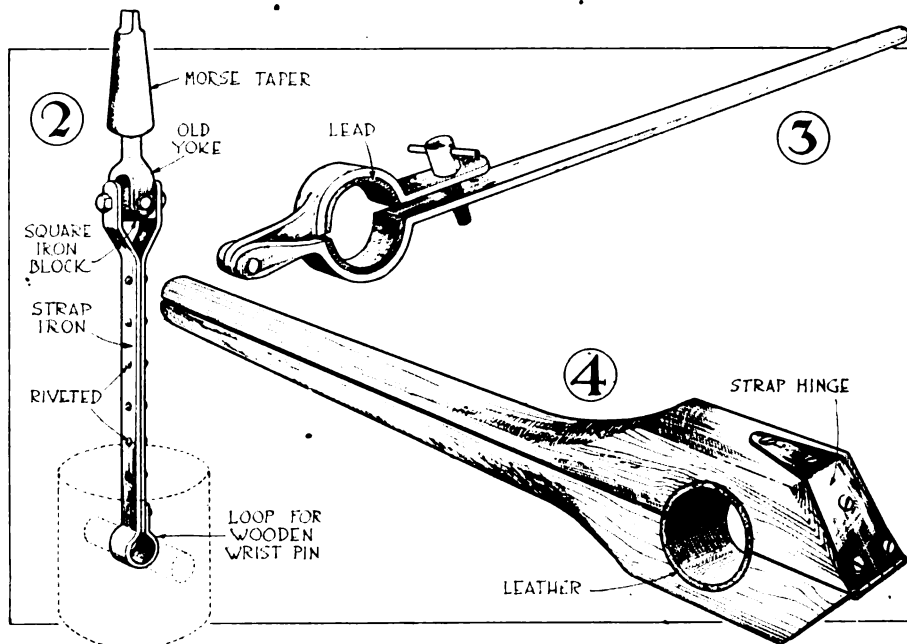


Fig. 2—Piston-lapping connecting-rod with universal joint to allow piston to find its alignment

Fig. 3—Crank-throw lapper which will grind or lap out scores and cuts not over .01 in. deep

Fig. 4—Crank-throw polisher which is used after the lapper has removed scores

In using this tool it is not necessary to center the throws, as the shaft can be turned on its own centers and the handle of the lapper laid across a rest so that it will slide in and out as the throw goes around.

After the throw has been lapped down to a smooth surface, the polisher shown in Fig. 4 is placed around the throw. This polisher is made of hard wood and the opening for the shaft is lined with a piece of belt leather.

The polishing material is ground glass, flour emery or other extremely fine abrasive mixed with oil. For very highly polished bearings this can be followed by a mixture of hand Sapolio and oil.

#### Lining Up the Pistons

After the lower connecting rod bearings are scraped in to fit the crank throws, the alignment of the upper and lower bearings is tested for parallelism

with a surface gage and two arbors.

While this test will check up whether or not the upper and lower bearings are parallel, it does not check up whether there is a kink in the connecting rod, and very often after the cylinder block is put on over the pistons it is found that they bind owing to the lack of clearance between the connecting rods and the piston bosses.

#### Gage for Testing Pistons

A simple gage to check this up without all the work of putting the block on is to have a gage or jig made of  $\frac{1}{2}$  in. steel cut exactly like a template of half the bottom of the cylinder block.

This is bolted on the top of the crankcase, and if the pistons fit exactly into the half circles the clearance is correct.

If the pistons will not fit in, then the rods will have to be bent, and the bearings checked again for parallelism with the surface gage. When they fit properly the template can be removed and the block put on with the certainty that it will not have to come off again to line up the pistons.

These templates can be made for a number of models and makes of cars, depending on which models are most handled in the shop.

The time wasted in putting on and taking off two or three blocks will pay for the time consumed in making a template.

#### Cash for Omaha

OMAHA, July 20—The Omaha Automobile Trade Assn. has decided to go on a cash basis. Also in accordance with the request of the N. A. D. A. members will close at 6 o'clock and all day Sunday. Quite a few other towns in this state are expected to follow Omaha's example.

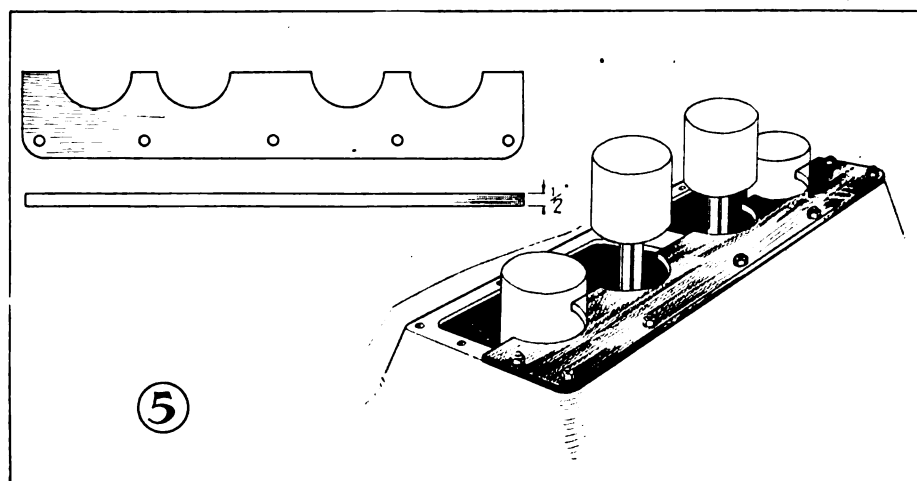


Fig. 5—Template for ascertaining whether there is proper clearance between the connecting-rods and the piston bosses without putting the block on

# Repairshop Shortcuts

*From Motor World Mechanics*

## No. 1456—TELEPHONE SWING BRACKET

A bracket that enables the telephone to be swung through the office window into the shop is made from a length of pipe bent to the proper shape. The pivot bearing is made by bending the pipe at 90 deg. at this point and slipping this over a piece of round stock which has been let into the window sill. The upper end is split and bent back, holes drilled and a board screwed on which acts as a support for the telephone.—Charles H. Willey, Concord, N. H.

## No. 1457—RUNNING-IN STAND

It is common practice to run engine bearings and pistons in after overhauling by the use of some external source of power. Frequently the power line shaft of the shop is used, but as an engine is stiff at first, excessive power is used, sometimes prohibiting the use of other machinery. Then after the engine is freed up, the whole power system must be kept running to continue the running in. A special stand, with its own source of power, is advisable. Such a stand resembles the usual engine stand, but mounts a small electric motor belt-connected to a gear box, from which another belt drive is taken to the engine flywheel. By always driving from a small to a large pulley, and using the change speed gears, the motor may be run at full load, and provide sufficient power for the initial running in.—S. T. W.

## No. 1458—CLAMP TO HOLD SHIMS

A clamp or chuck to hold solid connecting-rod shims while filing is made of a piece of iron 4 x 2½ x ½ in. A hole is drilled through the center and tapped for a ¾-in. bolt and two pins of drill rod are forced into holes that fit pretty tight. The pieces of drill rod should not extend above the iron greater than the thickness of the shims. The bolt has an eccentric dowel turned on the end so that when it is turned it forces the shim over against the pins, holding it. The entire chuck is held in a vise.—W. Mason, Overland Garage Co., Mounts-ville, W. Va.

## No. 1459—BEAM HANGERS

Two types of beam hangers for supporting chain hoists and tackles are made from ½-in. flat bar stock with

## Make a Dollar

*HOW often have you been compelled to rack your brain to overcome some difficulty? But when you did find a solution—what satisfaction it was! Well, here's a chance for you to dig some of those life-savers out of their hiding places and put them to work for your fellow-craftsmen. Send them to Motor World. We will pay you a dollar for every one accepted for publication.*

*The only requirements are these:*

*1—Describe the shortcut briefly but clearly, in few words.*

*2—Send a sketch, in pencil or pen, no matter how rough; our artists will finish the job.*

*3—Write on ONE side of the paper only.*

*4—Sign your name and initials, the name of the company you are with, and the town.*

*Write plainly. If your name is unusual, print it in capital letters.*

chain links welded in. Type A is of scissors design and is used for picking up frames of trucks when used on the lower end of the tackle. When used on the upper end of the tackle, it grips the ceiling beams. Type B is made by forming the two side parts, drilling the holes and welding in the links. It is portable, being clamped to the beam by one long bolt.—Charles H. Willey, Concord, N. H.

## No. 1460—FILING CABINET FOR SALES SLIPS

A filing cabinet for sales and time slips is made by putting shelves in a wooden box and using oblong tube boxes of

pasteboard for drawers. By leaving ½ in. space between the tops of the boxes and the bottoms of the shelves, no drawer pulls will be required as the fingers can get hold of the boxes.—R. D. Martin, Martin Automobile Co., Plainfield, N. J.

## No. 1461—HOLDERS FOR GUM AND FABRIC

Holders to keep gum and fabric rolls in so that they will not be damaged by lying around the bench are made by fastening the ends of the cans they came in to the edge of a shelf above the bench. This is done with a nail for each can. The rolls can then be slipped into the cans when not being used and they will be free from dust, dirt and injury, yet right at hand and always in the same place.—M. L. South, Day County Garage Co., Webster, S. D.

## No. 1462—RACK FOR TWIST DRILLS

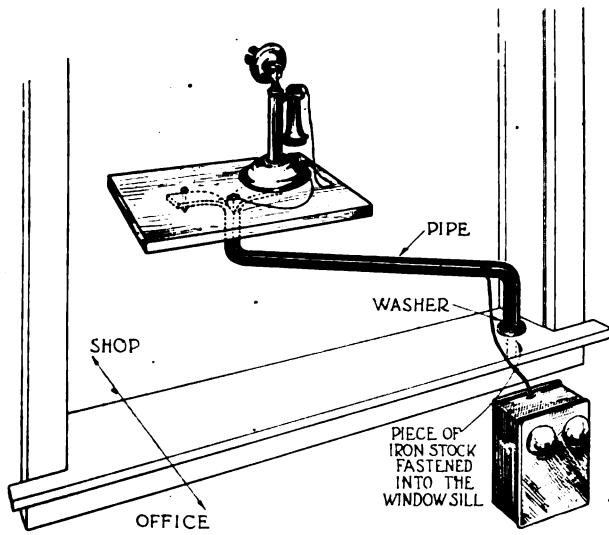
A rack for holding a stock of small twist drills is made by boring the required number of 1-in. holes 1 in. deep in a 2-in. board, or by drilling the holes all the way through a 1-in. board and fastening another piece of board to the bottom. The numbers or sizes of the drills are marked on the top of the board near the holes. A number of drills can be kept in each hole.—R. D. Martin, Martin Automobile Co., Plainfield, N. J.

## No. 1463—FORD ENGINE CARRIER

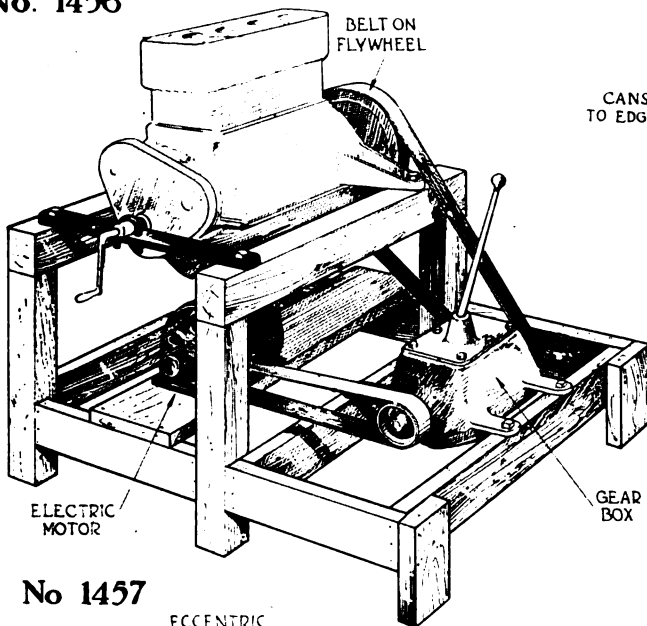
A Ford engine carrier is made of iron 2 in. wide x ¾ in. thick, bent to the shape and dimensions shown. A thumb screw clamps the hooks on between the third and fourth cylinders, and the hook of a chain tackle goes into the top of the carrier.—M. L. South, Day County Garage Co., Webster, S. D.

## No. 1464—GASKET PUNCH PLATE

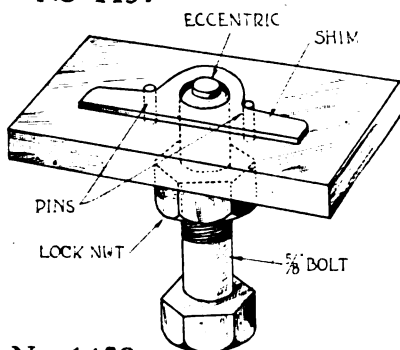
A punch plate for quickly and neatly cutting holes in gaskets is made from a piece of ¾-in. plate steel bent over to an angle of 180 deg., and having a space of ¾ in. between the sections. A series of standard holes, ¼, ⅜, ½ in., etc., is drilled and a set of punches made from standard size cold-rolled stock. In action, the gasket is placed between the sections and the punch cuts a clean hole.—Charles H. Willey, Concord, N. H.



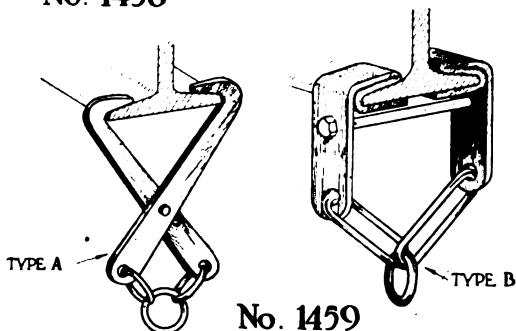
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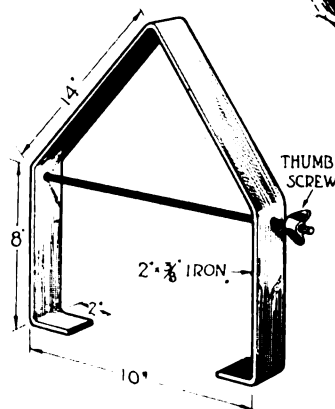
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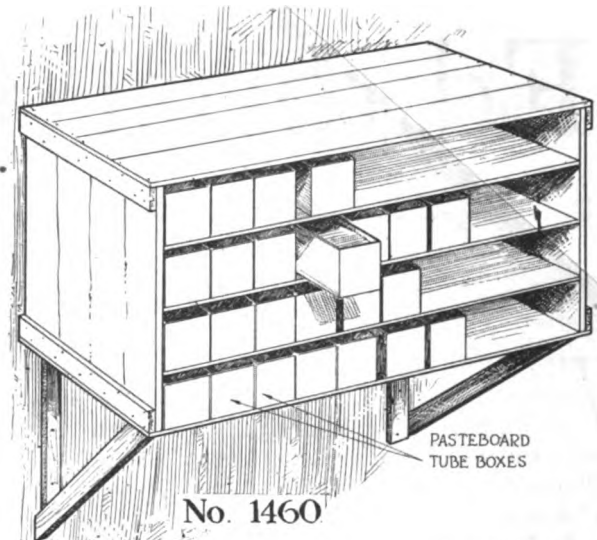
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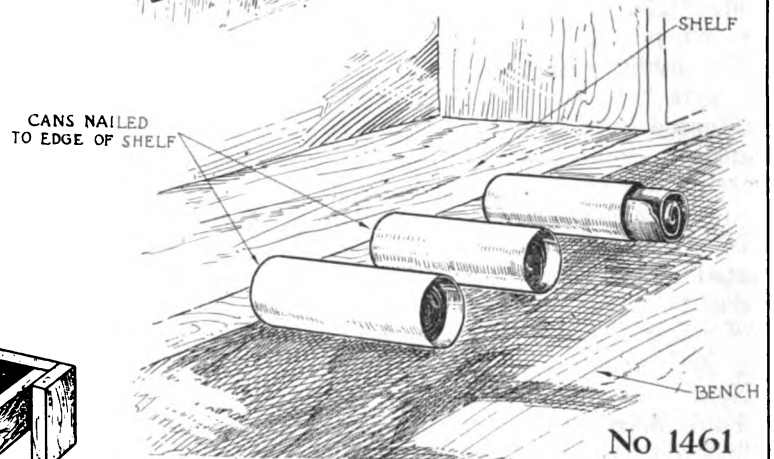
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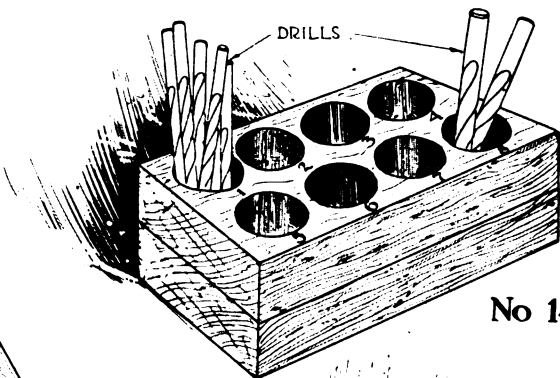
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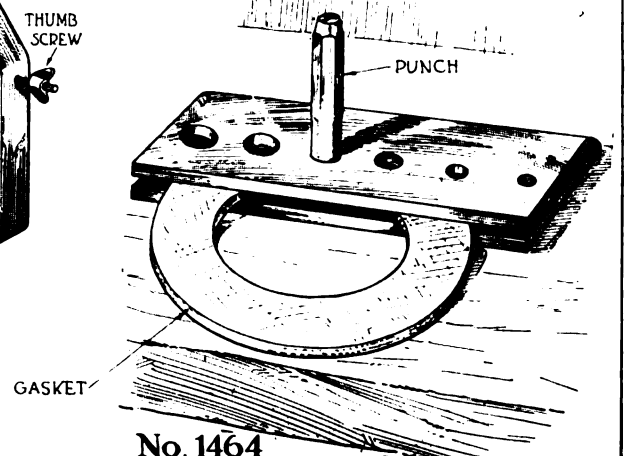
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No. 1461



No. 1462



No. 1464

# Editorial Observation

## “Expositions” Not “Shows”

WHEN the public and officialdom in its dash after luxuries gathered in cosmetics, jewelry and other things and in the same armful gathered up motor cars the industry set up a howl. And the public—while maybe it didn't say it in so many words—said we had always advertised our product as a “pleasure” vehicle and were to blame for our own plight.

The public was right. Wherefore we set out after the term “pleasure car” and have to a large extent eliminated it from our trade vocabulary, even if the dealers in some towns haven't yet succeeded in impressing the point upon their local newspapers.

And now comes another word we have overlooked. It is “show”—the “automobile show.” Years ago the annual expositions of motor cars were shows—but to-day they are decidedly NOT. The show factor is very minor. The shows have become business affairs; they are expositions.

Next winter the dealers and the N. A. C. C. plan to hold their “shows.” Doubtless various problems will be encountered. Last winter the Chicago show had to shut down for one day because it was classed by the government as a show. It was, to a large extent, on the same footing as the theaters.

Who knows what conditions will be next winter? Who knows what problems the trade will have to meet? We can't predict accurately, but one thing seems sure, and that is, that if the war is still on—and there is every indication it will be—there will be many obstacles in the way of such affairs as “shows” of “pleasure” cars.

Let's start NOW and shake off some more of this cosmetic atmosphere before we find ourselves classed with more undesirables from an exposition standpoint. Why wait until next winter to produce facts to prove we are not running SHOWS? Why not start now while there is time and plan next winter's affairs on something other than a SHOW basis?

Official Washington, in the words of none other than President Wilson, is credited with having stated that the preservation of the fundamentals of business is to be encouraged and that such affairs as conventions and expositions should be encouraged as far as possible. But how President Wilson feels about “shows” is not stated, and let us hope we never have to get an interpretation on the question. Let us begin NOW and call our affairs “automotive expositions.”

A show is something to which people come to be entertained and amused. The automobile events have never been real shows since the very beginning, although the first few may have been somewhat of

that nature. In the early days people did come just to look. A few come for that purpose to-day, but most of them come because they are interested in cars from the standpoint of prospective purchasers or are interested in designing and engineering developments.

What has just been said concerns that part of the general public which goes to the exposition, mostly from a small local area, but this part of the attendance has become a minor factor in the automotive exposition. Year by year the expositions have more and more become great business affairs. They assume the nature of conventions and temporarily centralized business.

To-day the big event in the automotive exposition is the dealer attendance. Dealers throughout wide areas visit the big centers at these times. They transact other than automotive business, but the part they play on these occasions in automotive affairs is such as to make their visit of prime importance. Sometimes this is the only occasion when the dealer gets in personal touch with those who guide the policies at the source of product.

All sorts of business are transacted. Rough spots in the yearly business program are ironed out. Heads of big businesses come in personal contact with the members of these great distributing organizations. Financial matters are settled. Uncompleted transactions are concluded. Business is made “all set” for another year.

*An event of this kind is no more a “show” than Charles M. Schwab is a vaudeville performer.*

There is also the growing educational side of the expositions. Dealers come into the distributor's establishment in some cities and receive instructions in difficult mechanical work—and in these days when there are not enough mechanics to go around this is highly important.

The dealers also get instruction in business methods and selling. They learn how to do more work with less effort. They become more efficient in their callings. They absorb the spirit of the greater, wider world that does not touch their home towns. They go back better citizens and better educated men.

The “show” side of the exposition has long since gone into the discard in practice. Let us put it there in actuality by dropping the term entirely. Let us call our expositions by their right names, and since they include more than cars let us also use the term “automotive.” Dealer associations are ordering their printing now. Make sure the words “automotive exposition” get on the advertising and tickets.



## Letters from Readers

*THIS page is for the use of MOTOR WORLD readers with something to say. Letters on subjects of interest to dealers, garagemen, repairmen and jobbers are always welcome.—EDITOR.*

### More of This Will Help

Editor Motor World: Enclosed we are sending copy of a letter that we have written to a couple of the leading farm papers in an effort to suggest to these publications that they aid in stabilizing public opinion regarding the automotive industry.—O. R. McDonald, manager of sales, The Gibson Co., Indianapolis.

Mr. Tim Le Quatte,  
Successful Farming,  
Des Moines, Iowa.  
My Dear Tim:

We had a state dealers' association meeting here yesterday for the purpose of getting together and assisting the government in finding ways and means to use the automobile industry for the purpose of advancing the interests of the war as much as possible.

Next Friday or Saturday, I believe it is, there is to be a meeting in Des Moines. Mr. Vesper, president of the national association, and Mr. Peake, secretary of the national association, will be the speakers. You should attend that meeting.

You know, of course, what your volume of advertising covering automobiles and automobile accessories amounts to. You know that 62 per cent of all the automobiles in this country are used by farmers and small town people to whom you circulate. We know that 85 per cent of all the automobiles used in this country are used primarily for business purposes. You know that if the farmer were compelled to discontinue the use of his automobile at 12 o'clock to-night, he would be rendered practically helpless, and it would cost him at least one-half of his time, which is now saved by the facility with which he can get around to town and back, and do such other things as are in his line of business.

Lou Safford, of the McQuay-Norris Mfg. Co., and Ray Sherman, editor of Motor World, were with me here yesterday, and in the course of our conversation a point was made of the fact that up to this time nothing had been done by the farm papers to crystallize the sentiment among farmers and to make them realize that the automobile was as real a help to the farmer as his plow, his harrow or any other part of his equipment.

The automobile has been talked of as a luxury, as a pleasure vehicle, etc., and at a hearing last week one Senaor went so far as to say, "Think of the clothing

and bread that could be bought for the \$2,000 that a man spends for an automobile." Vesper's reply to this was, "Yes, think of the clothing and bread that has been bought as a result of the development of that automobile, taking it from the crude iron to its time of delivery by the dealer—then think of the bread and clothing that will be bought by the dealer, his organization and by other organizations who will render service on that automobile during the next five years."

These are just some scattered ideas on the subject. They are enough, I know, to suggest the possibility to you, and I am going to ask that you take it up with the members of the Farm Papers Association and see if something cannot be done along these lines.

There is only one way to make Congress realize what the automobile really is, and that is for their farm constituents to tell them, and I believe that you and Hugh McVey can come as near to crystallizing this sentiment and help to maintain the automobile in the minds of the public as a utility as any two fellows I know.

I am writing this same letter to Hugh and I will be glad to hear from you relative to it.—O. R. McDONALD, Manager of Sales, The Gibson Co., Indianapolis, July 10.

### After Information

Editor Motor World: T. G. Breen is leaving for the Chevrolet factory at Oshawa to-morrow night, and expects to visit Detroit, Chicago and Minneapolis on his return trip.

If you know of any distributors, dealers or large garages who are considered to be operating an up-to-date, well-managed establishment within reasonable reach of any of these points, we would thank you very much to write Mr. Breen, care Congress Hotel, Chicago.

As we told you in our last letter, our business is growing very rapidly, and we are keen to learn anything which would help us to improve our business methods and service.—Breen Motor Co., Wm. White, Winnipeg, Canada.

### Men Want Work

Editor Motor World: I notice in Motor World, on page 45, last column, that the cry for men is so great that the shipyards are paying \$70 to \$120 per

week for unskilled help! Is this true? If so I could almost guarantee at least 100 men from this country. Of course, I can't expect wages to be this high. However, there are lots of idle men here that do not know where to go. Please send me the address of several firms that is in need of mechanics.—T. O. Stewart, Box 34, Georgetown, Texas.

The United States Employment Service is endeavoring to take charge of the placing of men, and we believe you may secure co-operation from this department. It has offices in Texas, Austin, Amarillo, Beaumont, Brownsville, Dallas, El Paso, Ft. Worth, Galveston, Houston, Laredo, Paris, San Antonio, Smithville and Waco. We suggest that you get in touch with the station which is most convenient to you and see if these bureaus cannot assist you in placing your men. An advertisement telling about these different bureaus and their locations was printed in the July 10 issue of Motor World on page 94.

### Try a Bonus Plan

Editor Motor World: This is not the first time I have come to your paper for help. We have a very good mechanic who is not as interested in our establishment as we would like to have him be. Good wages does not seem to bring the desired results. He does not seem to appreciate anything that we do for him. He is the head of our mechanics and also runs the battery department. Have you any ideas regarding a percentage or bounty or extra money we could work with him on the mechanical or battery end? I think if I could get him to feel that everything he did was actually helping him to make more money would eventually get him to work in the right spirit. I would appreciate any suggestions you could offer.—READER.

If you want to put a bonus plan into effect in your business, we suggest that you operate as follows:

Determine what percentage of profit the business ought to have, and then make a plan whereby the department that is managed by the man in question received a certain percentage of all profit above the profit that you retain for the business. For example, if you decide that the business must have a profit of 10 per cent, then you can agree with the manager of this department that his department shall have 50 per cent of all the profit that you make above 10 per cent.

Then, if you make a profit of 20 per cent, the shop will receive 25 per cent of the profits, amounting to 5 per cent. This can be divided among the employees in the shop on the basis of any plan you may determine. You may give a certain percentage of it to the manager, or you may pro-rate it among all the employees according to the salaries that they draw.

You can then constitute your employees a sort of young republic or committee and let them manage a great many of the details of the business. If a man wants an increase in salary it must first be approved by the rest of the organization of which he is a part.

This organization will not be too quick to grant it to him, because they will know that anything they give to any individual in the outfit is merely that much taken from their percentage of the profit. They probably will be pretty good judges of a great many different points of this kind.

This plan was adopted by a large dealer organization in New York city and worked well. It developed a great many economies, and did much to increase the percentage of profit. Furthermore, it gives the manager of the department and the employees a real interest in the business and causes them to take more interest in their work. You can apply the plan to one department or can apply it to the whole business.—Editor.

#### Industry Wages Increase

WASHINGTON, July 20—Pay-rolls in the automobile industry for wages for April, 1918, show an increase of 10 per cent over April, 1917. Fifty automobile factories report 117,352 workers for April, 1918, as against 125,407 in April, 1917, a decrease of 4.6 per cent, while the pay-roll increases despite the decrease in the number of workers from \$2,761,526 in April, 1917, to \$2,846,438 in April, 1918, an increase of 3.1 per cent.

In April, 1918, 49 automobile factories employed 116,258 men as against 116,037 in March, 1918, an increase of 0.2 per cent, while the pay-roll increases from \$2,766,820 in March, 1918, to \$2,826,064 in April, 1918, an increase of 2 per cent.

One automobile factory reported an increase of 25 per cent in wages over an increase of 15 per cent in employees. An increase of 10 per cent to the foundry

division of a passenger car factory was reported by another company. The foundry force equalled approximately 8 per cent of the organization. Eighty per cent of all employees in another plant received increases ranging from 7 per cent to 8.5 per cent, and about 90 per cent of the force of another establishment received an increase of approximately 10 per cent. The average pro-

ductive hourly rate in each plant was increased 0.0067 per cent. Another factory reported an increase in the productive hourly rate but gave no data.

#### No Solution to Labor Situation

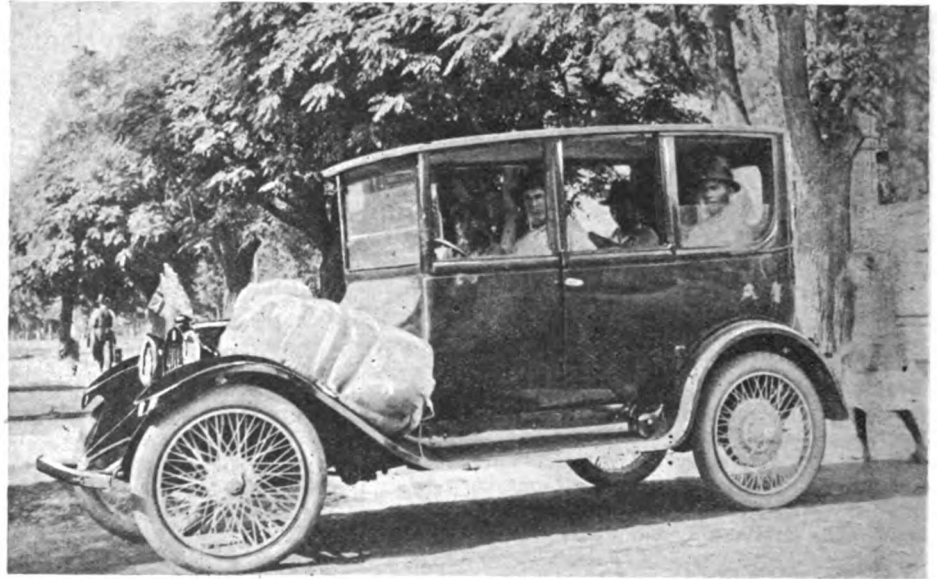
DETROIT, July 20—The question of labor in this territory is still an unsolved problem. Nearly all manufacturers are clamoring for more help of which there is none to be had. Most of them have become so used to the condition that they have forgotten its existence and it is causing them little worry. It is expected that Provost General Crowder's "work or fight" order which will become effective Aug. 1, will have a clarifying effect in the labor market.

The great prevalence of war work in this community and its increasing magnitude forecasts a diminishing production of other than war essentials. Because of the urgent requirements for war needs and the limited man power to produce them it is believed and prophesied that passenger car production will suffer a very marked reduction before next year.

#### Disapprove "Luxury" Tax

WASHINGTON, July 20—Members of the House ways and means committee and the Senate finance committee are voicing disapproval of the "luxuries" tax plan suggested by the Treasury Department. It is predicted by some of the senators that on a great number of these so-called luxuries no tax would be levied. They are insisting that it is not necessary to tax many of the suggestions solicited by the department, and that they are placing the figures too high.

## Farmers Will Buy Enclosed Cars



Editor MOTOR WORLD: We are sending you a photograph of a Dodge sedan sold by us to Mr. J. C. Gipford of near Lemoore, Cal. He is a typical "west side" rancher. Yours very truly, E. Warnock, Spear Brothers Auto Co., Hanford, Cal.



One thing at a time and the display changed often is one way to get back part of what you pay for window frontage. Here is how Fred Campbell, of St. Louis, featured the Kellogg line of tire pumps one week

# The RETAIL NEWS

## EAST

**The Overland-Manross Co., The Manross Garage,** formerly in Forestville, Conn., and the **Nystrom Garage,** Bristol, Conn., have all been consolidated in the Nystrom Garage in Bristol.

**The Backus Motor Co.,** Baltimore, a Ford agent, has become distributor for the Fordson tractor in Maryland and Delaware.

**The Fulton Motor Truck & Service Co.,** Baltimore, has taken salesrooms at 1107 Cathedral Street and a service station at 1104 Maryland Avenue.

**The National Rubber Co.** has opened a Baltimore branch with D. J. Hyman as manager and M. Friedman as sales manager for the Baltimore territory.

**H. L. Rose** has opened a used car salesroom at 29 South Charles Street, Baltimore.

**The Hurlburt Motor Truck Co.,** of New York City, will operate a branch in Philadelphia under the style Hurlburt Motor Truck Co. of Philadelphia, and has appointed P. C. Chrysler local manager.

**Andrew Johnson,** Wilmington, Del., has taken the agency for the Rayfield carburetor, which he is handling at his motor establishment, the French Street Garage.

**J. T. Closby,** Philadelphia, will build a garage to cost \$8,000 on a site 70 x 125, at Ninth and Luzerne Streets.

**S. Dagostino,** Philadelphia, will build a one-story garage to cost \$1,900 at 909-911 Bainbridge Street.

### New Truck Dealers

**Central Automobile Co. (Acason),** Baltimore  
**Sullivan Motor Truck Sales Co. (Sullivan)**  
 Baltimore  
**Eastern Motors Corp. (Wilcox),** Philadelphia

## PACIFIC COAST

**G. A. Southillier and A. H. Jones** have opened a repairshop at 2846 Broadway, Oakland.

**The Practical Vulcanizing Works** has moved to 1126 Valencia Street, San Francisco.

**The Rex Auto Supply Co.** has leased the corner store in the Y. M. C. A. Building, Golden Gate Avenue, San Francisco.

**The New Way Tire Co.,** 620 Golden Gate Avenue, San Francisco, has added a used tire sales department.

**L. E. Penniman,** distributor of Ensign carburetors for northern California, has opened a salesroom and service station at 605 Van Ness Avenue, San Francisco.

**The Hartmann Motor Sales Co.** has moved to a new building at 1910 Van Ness Avenue, San Francisco.

**J. B. Ritter** has purchased the Smith Garage, 819 Ellis Street, San Francisco.

**The American Vulcanizing Co.** of San Francisco has opened a branch at 149 B Street, San Mateo, Cal.

**J. H. Russell** has opened Portage tire salesrooms at 276 Golden Gate Avenue, San Francisco. He will conduct his business under the style Russell Tire & Supply Co.

**William Norrington, Jr.,** has opened a body building shop at Fell and Gough Streets, San Francisco.

**J. H. Graham,** Case distributor, has moved to new quarters at Tenth and Stark Streets, Portland.

**Lee L. Gilbert,** Portland, has been appointed wholesale distributor of the Elgin for Oregon and the southern counties of Washington.

**C. J. Swanson and J. P. Andrews** have opened the Pacific Auto Top Co. at 314 East Pike Street, Seattle.

**The Western Auto Supply Agency,** accessory and auto supply distributor, has opened a branch in Seattle at 1204 East Pike Street. O. H. Pound is the local manager.

**Ripley & Houghton,** Seattle, have opened the Olive Street Tire Shop.

**Seels and McDairmid,** Seattle, mechanical experts, have moved to their new building erected for them at 1108 Pine Street.

**The Sunset Motor Co.,** Seattle, has moved from 915 East Pike Street to Broadway and East Union Street, where it occupies a new 3-story structure.

**James E. Searce,** Liberty Six factory representative on the Pacific Coast, has been given the entire Northwest territory, from Minneapolis, west.

### New Garages

**Howard & Connelly**.....  
 533 Ellis Street, San Francisco  
**Gorst & King Auto Co.**...North Bend, Ore.  
 Second Street Garage.....  
 366 Second Street, Portland  
**H. B. Quick (addition)**....Chehalis, Wash.

### New Truck Dealer

**Louis Roesch (Atterbury)**.....Seattle

## SOUTHWEST

**The Cook Automobile Co.,** Little Rock, has moved to its new home on the northwest corner of Sixth and Louisiana Streets.

**M. R. Benson,** Anthony, Kansas, has opened an automobile business.

**The Farmers & Merchants Battery Co.,** Beloit, Kan., has moved to new quarters on Main Street.

**H. F. Kaump,** Blue Rapids, Kan., has bought F. A. Train's interest in the Kaump Train Motor Co. and will manage the business.

**Robert Nelberger,** Council Grove, Kan., has bought the automobile business of Carl Lamb.

**Harry Berry,** Grenola, Kan., has bought Bud Crowther's interest in the Trimble, Crowther & Berry Garage.

**J. O. Hunsley,** Larned, Kan., has bought the repairshop of A. A. Doerr.

**E. G. Wood,** proprietor of the Lawrence Buick Co., has opened a salesroom at 704 New Hampshire Street, Lawrence, Kan.

**Andresen & Andresen,** Lincoln, Kan., doing business at the Home Garage, was recently dissolved by mutual consent. Albert Andresen will continue business at the old stand.

**Byron Stout,** Marlon, Kan., has bought Fred Stout's interest in the Stout Motor Co.

**C. K. Soublier,** Meade, Kan., has closed out his automobile supply business.

**The Briggs Motor Co.,** Parsons, Kan., has moved to new quarters.

**The Rosebraugh Motor Co.,** Winfield, Kan., has bought the Mogle Motor Co.

**Lloyd Wise,** Carthage, Mo., has bought a half interest in the Carthage Auto Co.

**Renner & Williams,** Carrollton, Mo., have opened The Quick Service Motor Co.

**J. J. Knaack,** Edina, Mo., has bought the interest of his partner, Guy Surry, in the garage of Surry & Knaack.

**The H. D. Brown Motor Co.,** Fulton, Mo., which has been located in the Grant Bldg. on Market Street, has moved to larger quarters in the Tucker Bldg., on East Fifth Street.

**The Bostwick Garage,** Independence, Mo., has been sold to J. L. Johnson. Bostwick has joined the army.

**A. S. Maxon** has bought the Service Garage at 224 North Liberty Street, Independence, Mo.

**The Smith Motor Co.,** Ford agent at Independence, Mo., has moved to new quarters at 313 West Maple Street.

**Lattimer & Sons,** Jasper, Mo., have bought the garage of C. H. Lilly.

**The Gates Half Sole Tire Co.,** Joplin, Mo., has opened a branch at Fifth and Wall Streets.

**The Pacific Welding Co.** has opened a shop and office at 310 Minnesota Avenue, Kansas City.

**The Lotta Miles Tire Co.,** Kansas City, has moved to new quarters at 2305 Grand Avenue.

**The Kansas City Battery & Supply Co.** has been formed to act as distributor for the Vesta Battery in Missouri, Kansas, Oklahoma and Nebraska.

**The H. J. Perry Motor Co.** has moved its garage to 845 Minnesota Street, Kansas City.

**The Motor & Machinists' Supply Co.** has moved to new quarters at 1817 Grand Avenue, Kansas City.

**The P. J. Downes Motor Co.,** Kansas City, has taken the agency for the Nash truck for the western half of Missouri and all of Kansas.

**The Murray Tire and Supply Co.,** 2301 Grand Ave., Kansas City, is closing out its tire lines.

**George H. Daulton,** Kansas City, has moved his garage to 11 West Thirty-first Street.

**Flynn & Breting,** Kansas City, has opened an authorized service and sales station for the Ford at 3823 Broadway.

**Sam F. Baker Motor Co.,** Kansas City, has opened an authorized service and sales station for the Ford at 3358 Main Street.

**The Southwestern Rubber Co.,** 1406 McGee Street, Kansas City, is in the hands of a receiver who has appointed Jos. M. Jones of 1406 Ridge Arcade as referee.

**The Greenlease Motor Co.,** Kansas City, has 16 stars in its service flag. The company is Cadillac dealer.

**The Sayers & Scovill Co.,** manufacturer of the Sayers Six, has opened an office at 1821 McGee Street, Kansas City, with J. E. Scobey as manager. This new branch will handle the business of the dealers of Missouri and Kansas.

**The Grand Auto Radiator Co.** has opened a new shop at 1933 Grand Avenue, Kansas City.

**The Wear U Well Tire Co.** has opened a salesroom and repairshop at 1410 McGee Street, Kansas City.

**The A. H. Jennings Garage** of Kansas City has been sold and will be operated by the new owners under the style Northwestern Garage. A. H. Jennings & Sons will sell tires only in future.

**C. E. Cawthon,** Kingston, Mo., has sold his automobile repairshop.

**Barrett & Collins,** Rock Port, Mo., have bought the garage and automobile business of Townsend & Wolf.

**The Fritz Tire & Vulcanizing Co.** has opened new quarters at 1631 Frederick Street, St. Joseph.

**The Autotorium Co.**, St. Joseph, has moved to new quarters at Ninth and Felix Streets.

**The Miller Tire Service Co.**, 3567 Lindell Street, St. Louis, Mo., has changed its style to the Fishell Tire Service Co., and Arthur S. Fishell has been elected president.

**The Motorist Auto Supply Co.** has opened a jobbing and supply house at 1832 Locust Street, St. Louis.

**The Briscoe Motor Sales Co.**, St. Louis, has taken possession of the new warehouses at 2925 Locust Street.

**The Wilson Motor Co.**, St. Louis, has taken the Harroun agency.

**The Wielandy-Reller Auto Equipment Co.**, St. Louis, distributor of the Kelsey Streamline body, has moved to larger quarters at 1610 Locust Street.

**The Federal Truck Co.**, St. Louis, has opened a welding department in its repairshop under the direction of D. M. Lawrence.

**Mat L. Waggstaff and Mort Ratigan** have opened a service station at 207 Beaumont Street, St. Louis.

**The Southwestern Motor Sales Co.** has opened salesrooms at 3917 Olive Street, St. Louis, for the Decatur. The company will have the distribution of this car in Missouri, Kansas and southern Illinois.

**Wm. McKeever**, Vienna, Mo., has disposed of his blacksmith and woodwork trade and hereafter will give his entire attention to the automobile business.

**W. D. Leeper**, Alex. Okla., has bought the garage of Asbury & Frank.

**Stanley Falls**, Atoka, Okla., has bought the Atoka Garage.

**The Mid-West Tire & Rubber Co.**, Bartlesville, Okla., has established a branch in Bartlesville at 202 East Second Street.

**D. G. Brodock**, Deer Creek, Okla., has bought the garage of C. R. Almack.

**T. J. Wagner, F. D. Babb and V. A. Noble**, Haldton, Okla., have bought the Fleet Cooper Auto Co.

**The Western Motor Co.**, Miami, Okla., has opened branches in Muskogee and Nowata, Okla.

**The Fast-Buck Motor Car Co.**, Muskogee, Okla., is erecting a new building at Sixth and Court Streets.

**The Charles Dudley Motor Co.**, Oklahoma City, has moved into its new building at 706 North Broadway.

**Henry Mansur and N. A. Taylor**, Okemah, Okla., have bought the Okemah Garage.

**Sam Bloom**, Picher, Okla., has bought the Keystone Garage.

**The Gramm-Bernstein Motor Sales Co.**, Tulsa, Okla., has taken over the Gessol Motor Sales Co.

**The Thomson Motor Car Co.**, Austin, Tex., has moved into its new building at Fifth and Colorado Streets.

**W. B. Walters & Co.**, Mineral Wells, Tex., has bought the Carlsbad Garage.

**W. C. Porch**, Sanger, Tex., has bought the Stenson & Habern Garage.

#### NEW GARAGES

Vale & Hill .....Arkansas City, Kan.  
Johnson & Crackel .....Coffeyville, Kan.  
L. G. Snow .....Girard, Kan.  
Trimble & Berry .....Grenola, Kan.  
J. L. Tolar .....Kingman, Kan.  
John Nottingham .....Lawrence, Kan.  
Bert Ally .....Neodesha, Kan.  
French & Freeman .....Oswego, Kan.  
F. C. White .....Quenemo, Kan.

Heimlein Brothers .....Wichita, Kan.  
William Service .....Wichita, Kan.  
Frishie Auto Car Co. ....Topeka  
Price Auto Service Co. (addition)....Wichita  
Morwood & Smiser .....Amsterdam, Mo.  
F. C. Heimer & Co. ....Brunswick, Mo.  
O. H. Young .....Hastville, Mo.  
A. Hawkinson .....Kansas City  
Young & Warren .....Kansas City  
Warmsholdt Motor Co. ....Kansas City  
F. L. Ruckel Co. ....Kansas City  
General Auto Co. ....Washington, Mo.  
F. W. Silver .....Braman, Okla.  
L. P. Anderson .....Chandler, Okla.  
Greer & Stewart .....Davis, Okla.  
Fred Trebbe (addition) .....Hobart, Okla.  
L. C. Filby .....Picher, Okla.  
Metropolitan Garage Co. ....Sulphur, Okla.

#### New Truck Dealers

White Auto Repair Co. (Dart).....Chanute, Kan.  
R. C. Lawler (Dart).....Girard, Kan.  
Milliken & True (Dart).....Independence  
Kimball & Delay (Dart).....Parsons, Kan.  
Milliken & True (Dart).....Wichita  
Wilson Motor Car Co. (Acason)....St. Louis  
Harry Newman, Inc. (Diamond T).....St. Louis  
Martin Motor Truck Co (Fulton)....St. Louis  
Furrow & Welch (Dart).....Guthrie, Okla.  
Texas Auto Sales Co. (Dart)....Paris, Tex.

#### MIDDLE WEST

**The Auto Service Co.**, Carlinville, Ill., announces a change in which Leo Seaman retires. The business will be conducted in the future by Harry Daley. The company was organized five years ago.

**M. S. Burk**, Decatur, Ill., has opened a garage and sales agency at 429 East William Street, to be styled "Ocean to Ocean." He will be distributor for the Dixie Flyer car in his territory.

**J. R. Bousler**, Danville, Ill., has purchased a half interest in the garage of Walter Hughes, 22 South Hazel Street.

**Constant & Groves**, Springfield, Ill., have opened a tractor agency and will distribute the Cleveland machine in the Sangamon County district.

**The Briscoe Motor Sales Co.**, Springfield, Ill., has been organized and has opened a garage and sales agency at 223 Monroe Street. John S. Harms and Albert E. Brown comprise the new firm. They have been operating a garage and sales agency at Richland for some time and will continue the latter business.

**The Square Deal Auto Co.**, Dunkirk, Ind., has purchased the Dunkirk Auto Co.

**The W. Grinnell Motor Co.**, 217 Washington Street, Muncie, Ind., has been bought by Wachtell & Moore.

**Fred A. Brenner**, Saginaw, who has been associated with E. L. Black in the Dodge and Mitchell agencies for about 3 years, has taken over the agencies.

**Vaa Peenen & Schrier**, Kalamazoo, will represent the Briscoe Motor Car Co. in that vicinity. They will be located at the Motor Car Exchange at 422 West Main Street.

**The Longdin Garage**, 23 West Second Street, Fond du Lac, Wis., has been purchased by the H. W. Kerr Motor Co. of the same city, a district dealer in the Maxwell and Chalmers. The Longdin Garage has been operated by Capt. S. H. Longdin since his son, Lieut. L. J. Longdin, re-entered the military service.

**A. Bowman**, LaCrosse, Wis., has sold his garage and repairshop at 127 North Third Street to S. Berling.

**The Service Garage**, North Jackson Street, Monroe, Wis., has been sold by George Barnum to Warner A. Pfeiffer, who has conducted a storage battery service station in the building.

**George F. Breitbach**, South Milwaukee, Wis., has taken occupancy of his new public garage and repairshop, erected at a cost of \$15,000 to replace the structure destroyed by fire last December. The garage is located at 2210 Twelfth Street. The temporary garage at 2208 Tenth Street will be continued as a warehouse.

#### NORTHWEST

**The Iowa Elcar Auto Co.** has opened temporary salesrooms at 116 Eighth Street, Des Moines.

**R. B. Smith** has bought the Glenwood Auto Co., Glenwood, Iowa.

**Ed Harlow**, Greenfield, Iowa, has bought the interest of Wileet Connolly in the Connolly & McClure Garage.

**O. L. Lein**, Kanawha, Iowa, has sold the Lein Auto Co. to the Forest City Implement Co.

**The Wagner Motor Co.**, Mason City, Iowa, has taken the agency for the Staude tractor.

**Tom and A. A. Herlein**, Roland, Iowa, have bought the Christ Hall Garage.

**Will George**, Wiota, Iowa, has again purchased an interest in the Beebe & George Garage.

**Brown Brothers**, Atwater, Minn., have sold their garage business to W. H. Ginpz of Bird Island, Minn.

**E. A. Robbins**, Browns Valley, Minn., has bought the interest of his partner, J. C. Fligge, in the Browns Valley Garage.

**F. A. Sernett**, Fulda, Minn., has bought the N. H. Lanertz Garage.

**William Kuntz**, Hayfield, Minn., has bought the garage of John Larson and styled it Premo Auto Co.

**J. R. Kelly**, Kellogg, Minn., has bought the Pioneer Garage from Leo Riester.

**The William J. Graves Motor Co.**, 2520 Nicollet Avenue, Minneapolis, has been succeeded by George S. Schafer.

**C. E. Kilgand**, Roseau, Minn., has bought the Roseau Auto Co.

**I. D. Thomas**, St. Peter, Minn., has sold his interests in Motor Inn to his partner, A. W. Busby.

**The Bloemke Garage**, Springfield, Minn., has sold its vulcanizing department to J. D. Schneider, Storm Lake, Iowa.

**James Deneen and George Roberts**, Warroad, Minn., have leased the Warroad Auto Co. Garage from Nelson & McKenzie.

**Willis Mack**, Waterville, Minn., has bought the interest of Lorenz Hanson in the Waterville Vulcanizing Co.

**W. W. Morse**, Withrow, Minn., bought the Withrow Garage from H. J. Greenwalt.

**F. R. Carley and Thomas Carley**, Geraldine, Mont., have leased the H. A. Schroeder Garage at Montague, Mont.

**C. W. Blair**, Harlowton, Mont., has bought the repair department of the Public Motor Garage from Henry Jorget.

**L. H. Boller**, Valentine, Mont., has bought the garage of F. V. Tindall.

**Theodore Hermanson and G. O. Sletten**, Bowman, N. D., has bought the Curtiss Sampson Garage.

**E. W. Cone**, Finley, N. D., has bought the interest of his partner, Albin Albinson, in the Finley Auto Co.

**C. L. Kellstrom**, Flasher, N. D., has bought the Johnson Garage.

**O. E. Boise**, Grand Rapids, N. D., has bought the Berlin Garage, Berlin, N. D.

**Harry Cockburn**, Hazleton, N. D., has leased the Oakes Garage at Oakes, N. D.

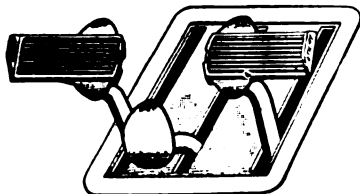
**Jullus Gimbel**, Hazleton, N. D., has bought an interest in the N. W. Motor Co.

**A. E. Intlehouse**, Milnor, N. D., has bought the J. K. Taylor interests in the Milnor Garage.

**H. H. Chrisman**, Wahpeton, N. D., has bought a controlling interest in the Wahpeton Garage Co., and has taken management of the Dahl-Buscher Co. Garage.



# Automotive Equipment



## UTILITY SURE-GRIP PEDALS

Pedals which attach to the regular Ford pedals, extend out to the sides and have a corrugated rubber surface to secure a grip. They are made of pressed steel, finished in black baked enamel and equipped with heavy rubber pads edged with non-rusting metal. Can be attached quickly without boring holes by simply tightening one nut. Packed one pair in a box, ten boxes in a carton and ten cartons in a case. Price \$1 per pair.—Hill Pump Valve Co., Archer Avenue, Canal and Twenty-third Streets, Chicago.

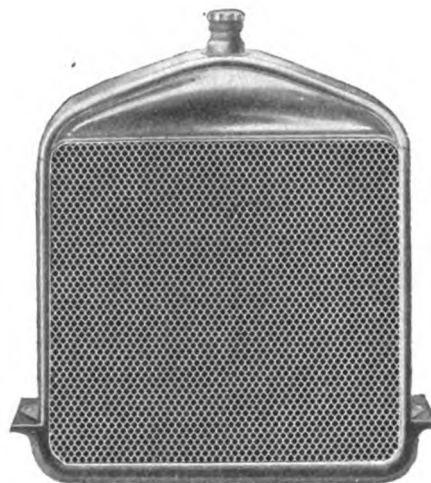


## PUNCH NON-GLARE LENS

A non-glare lens, the top part of which is stippled and the bottom part formed in parallel prisms. It is claimed that the stippling prevents rays of light from projecting more than 42 in. above the ground and that the prisms project the light over 150 ft. The stippling also gives side and ditch light. The lens is smooth outside, the stippling and prisms being formed on the inside. Made in all sizes from 8 to 10 in. in diameter inclusive. Price \$1.50 per pair for all sizes (east of Denver).—Trieber-Punch Co., 1469 Michigan Avenue, Chicago.

## DENNISON WORK TAGS

Work tags for garages and tire repairshops. The upper part of the tag is perforated and reinforced for the string and the lower part of the tag is detachable and serves as the customer's receipt. Tags are printed on heavy manila in black with consecutive numbers in red and the name and address of the firm. Prices depend on size and amount of printing. The Miami tag, 9 x 3 1/4 in., shown here may be had for \$3.45 for 100, \$4.25 for 500, \$5.25 for 1000, \$8.50 for 2000 and \$16.50 for 5000. The Toledo tag shown can be had for \$4.06 for 100, \$4.55 for 500, \$6.41 for 1000, \$11.48 for 2000 and \$23.40 for 5000.—Dennison Mfg. Co., Framingham, Mass.



## SUPERIOR RADIATOR FOR FORDS

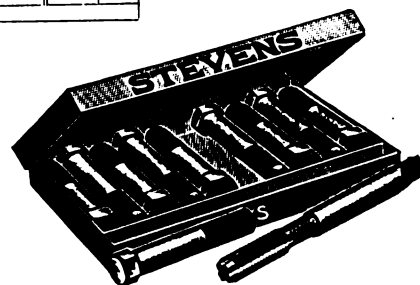
A honeycomb radiator for Fords constructed entirely of brass and copper. Built in two models, No. 16-F fitting 1909 to 1912 cars and No. 18-F for 1917 and 1918 cars. Both models have detachable casings, and the core is the same type and design as is used on the Packard. Sample radiator shipped to jobbers and dealers. Price \$28 for model 16-F, \$30 for model 18-F.—Superior Lamp Mfg. Co., 136 West Fifty-second Street, New York City.

## OVER-SIZE CYLINDER HEAD BOLTS AND CAPS FOR FORDS

A set of ten over-sized cylinder head bolts and a special tap for Ford engines. These are intended for use where the original cylinder head bolts have become broken. The hole is tapped out and the new bolts inserted. Packed in a box. Price \$2.—Stevens & Co., 375 Broadway, New York City.

THE TOLEDO AUTO & GARAGE CO.		3527	
217-229 Twenty-First St., TOLEDO, OHIO			
Name	Car No.		
Date			
Quan.	Charged	Finished	A'm't
	Right Storage		
	Short		
	Washing		
	Polishing		
	Tire Work		
	Repairs		
TOTAL			
Quan.	Receipt	3527	A'm't
	Charged		
	Finished		
	Right Storage		
	Short		
	Washing		
	Polishing		
	Tire Work		
	Repairs		
TOTAL			
CAR NO. TOTAL			
THE TOLEDO AUTO & GARAGE CO.			
217-229 Twenty-First St., TOLEDO, OHIO			
ELECTRIC SERVICE STATION			

MIAMI TIRE CO.		3527	
VULCANIZING DEPARTMENT			
No.	1940	Date	
Name			
Address			
Tube Repairs	Charges		
Casing Rep.			
Blowout Boot			
MIAMI TIRE CO.			
VULCANIZING DEPARTMENT			
No.	1940	Date	
Name			
Address			
Tube Repairs	Charges		
Casing Rep.			
Blowout Boot			



# New Series Clark Internal Gear Drive Axles

**THE** Clark Equipment Co., Buchanan, Mich., has placed on the market a new series of internal gear drive axles on which there are seven models ranging from  $\frac{1}{2}$  to 6 tons capacity. On axles ranging in capacity from  $\frac{3}{4}$  to 3 tons, the torque is taken through the live axle by bolting to the load-carrying axle at the spring centers. On the larger axles the torque is taken through a cross member which is bolted to the brake flange at the outer ends and to the gear case at the center of the driving axle. The torque on all models is taken directly from where it is set up to the springs.

with a scleroscopic hardness at 75-80 deg. which gives a surface hardness that cannot be touched with a file.

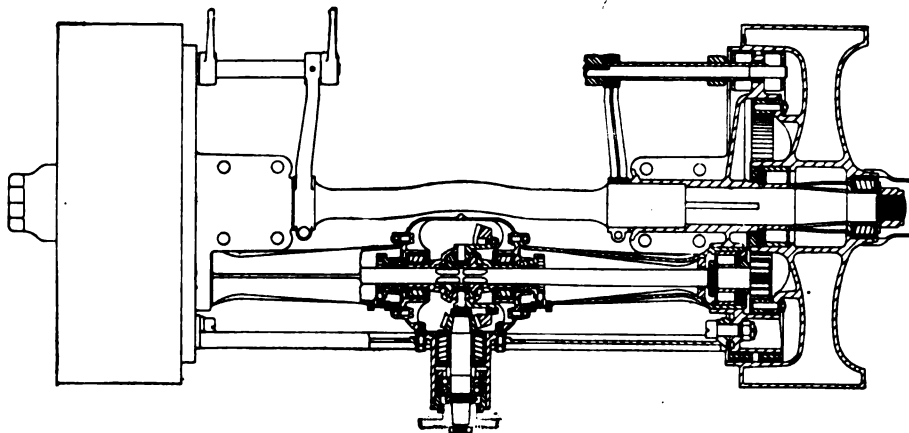
All points throughout the axle that are subject to excessive wear are fitted with phosphor bronze bushings. On axles for 1 and 2 tons capacity trucks the M & S locking type differential can be furnished, or the plain type differential produced by the Brown-Lipe-Chapin Co. The bearings used are Hyatt, New Departure and Bower with S.K.F. self-aligning thrust bearings both sides of the differential. The carrying capacity on the spring pads of the different axles is as follows:

Model	Capacity	Carrying Capacity
A	$\frac{1}{2}$ - $\frac{3}{4}$ ton	~ 2500 lb.
AS	$\frac{3}{4}$ -1 ton	3000 lb.
1	1-1 $\frac{1}{2}$ tons	4200 lb.
2	2-2 $\frac{1}{2}$ tons	6500 lb.
3	3-3 $\frac{1}{2}$ tons	11000 lb.
4	4 tons	15000 lb.
5	5-6 tons	18000 lb.

Using 36-in. wheels, the road clearance is 12 to 18 in., whereas with 40-in. wheels it is from 12 to 14 in. The drive and torque is taken through the springs.

The pinion shaft bearings are thoroughly lubricated from oil in the gear case and hard felt washers are used throughout the axle to exclude dirt and retain lubricant in the proper places. It is unnecessary to remove wheels when lubricating the internal gear, as an opening into the internal gear chamber is easily accessible. All bearings are of the non-adjustable type. All parts of the axle are readily accessible and are interchangeable, there being no right or left-hand parts. Axles are designed to operate with any type wheel and wheels are readily removable without injury to the bearings, as they can only be put on one way. All finished surfaces are rough turned and ground to close limits.

These axles were known in the past as Celfor but due to the merging of two concerns, the axle is now known as the Clark.

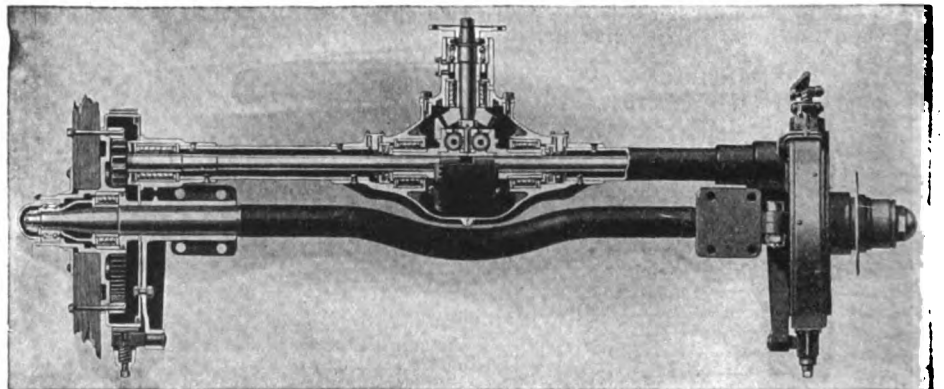


Sectional View of Clark Heavy Axle

No connection is found between the driving and load-carrying axles at the center.

In all models, the driving axle member is placed in front of the load-carrying member, allowing a shorter propeller shaft. The shafts that transmit the power to the axle are fabricated from the best quality chrome nickel steel, heat treated.

The load-carrying member is a one-piece drop forging in all the models, and is made from 1 $\frac{1}{2}$  per cent chrome nickel steel, heat treated, with integral spindles. On the light axles the gear reduction is 6:1, on the medium duty 8:1 and 10:1, whereas on the heavy duty models it is 11:1, 12 $\frac{1}{2}$ :1 or 15:1. The gears are 3 $\frac{1}{2}$  per cent nickel steel, double heat treated



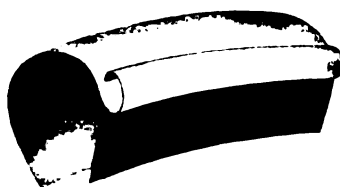
Sectional View of Clark Light Axle

## LAMSON PNEUMATIC TUBES AND CARRIERS

These pneumatic tubes and carriers are for conveying papers, money and small articles from one part of a building to another. The pneumatic tubes operate by air pressure, carrying cylinders through brass pipes. The carriers are wire baskets or wooden or metal containers which are suspended from a wire by a pulley and travel from one part of a floor to another part of the same floor. Prices vary in accordance with the style of terminals, amount of tubing or wire, etc.—Lamson Co., 100 Boylston Street, Boston.

## GOODYEAR CORD PATCH

A cord patch for repairing inside breaks, injuries and stone bruises in cord tires and for reinforcing weak spots. It is



made of several layers of cords, the same as is used in the construction of the tire itself, with a heavy friction of gum between

each layer of cords. The edges are tapered to prevent tube chafing, and its application to the inside of the tire is similar to that of a regular patch, using vulcanizing heat. Made to fit all sizes of cord tires. No. 1 fits 3, 3 $\frac{1}{2}$  and 4-in. tires; No. 2 fits 4 $\frac{1}{2}$  and 5-in. tires; and No. 3 fits 6, 7 and 8-in. tires.—Goodyear Tire & Rubber Co., Akron.

## OVEE ANTI-FREEZE

A powdered preparation intended to be dissolved in water and the solution placed in the radiator to prevent freezing. Packed in a cardboard box containing 8 lb. which when dissolved in 5 gal. of water will not

freeze above 20 deg. below zero. It is claimed that the material itself does not evaporate, is odorless, and that it does not damage the radiator or other parts that it comes in contact with. Price \$2 per box.—Ovee Mfg. Co., Louisville, Ky.

## AKRON-WILLIAMS TIRE REBUILDING STAND

A tire rebuilding stand for retread jobs and major sectional repairs. Has a spring ratchet attachment which permits the tire being turned either way, or locks it rigidly in any desired position. Price \$30.—Williams Foundry & Machine Co., Akron.

# Truck Makers Assured They Will Get Reasonable Amount of Steel

## *Conference with War Board Results in Giving Industry Plan for War-time Operation*

WASHINGTON, July 20—Motor truck makers are assured a reasonable supply of steel for manufacture of parts and trucks both for war and general essential purposes as result of a meeting yesterday between the National Motor Truck Committee, National Automobile Chamber of Commerce and the Priority Committee of the War Industries Board.

The meeting was granted following presentation of a written statement by the truck committee to the Priority Committee. Displaying a broad and comprehensive view of the utility of motor trucks, the Priority Committee, headed by Judge Edwin B. Parker, informed the truck committee headed by George M. Graham that trucks are considered as vital commodities in the main, and that the necessary steel will be found for the industry provided:

### What Makers Must Do

1—Motor truck makers and agents use every facility for encouraging the widest possible proper use of trucks during the war.

2—Motor truck makers will comply with a list of essential truck users in making future sales.

3—Motor truck makers and agents will work for the strictest conservation of those trucks now in the hands of consumers by urging their repair and maintenance so long as possible before replacement by new trucks. Owners and operators will be requested to repair and use the old trucks, operate them fully loaded and maintain shifts of drivers to secure the greatest use possible per day from each.

The list of essential users is to be compiled by Graham and C. C. Hanch, Chief Automotive Section, War Industries Board, within the next 10 days, and will later be checked and completed by the Priority Committee.

It will contain at the outset every kind of truck user. Those not considered essential will be eliminated.

Since Graham filed a list yesterday showing that more than 80 per cent of the truck users are now using their trucks either directly or indirectly for war work with most of the remainder performing important general domestic business, it is expected that about 90 to 95 per cent of existing truck users will be considered essential and will be al-

lowed to make further purchases and will be urged to further develop motor truck usage.

The written presentation sent to the Priority Committee recently is given below. It tells of the shortage of steel now existing in all motor truck factories, of the utility of the truck as a method of transportation for both general and war work, of the Government recognition of the truck as a mode of transportation for war materials, food produce and general express work.

### 585,000 Trucks in Use in 1919

Eighty per cent of existing trucks are used, says the presentation, for various kinds of work directly or indirectly connected with the war. These are tabulated with the percentages. On Jan. 1, 1918, 400,000 trucks were used in this country, it is shown, with production indications for 1918 placed at 275,000 trucks, of which 50,000 go to Europe for war work, 40,000 replace others worn out in this country, making a total of 185,000 to go into domestic use.

This insures approximately 585,000 trucks in use in this country for 1919, and the committee estimated that these will individually average 10 tons haul per day, or a total of 5,850,000 tons hauled daily by trucks. These figures impressed the Priority Committee considerably.

Graham further explained at the hearing allowed yesterday, which was attended by the Priority Committee, C. C. Hanch, and the Truck Committee, including George Graham, Pierce-Arrow Motor Car Co. and chairman; Windsor T. White, White company; M. L. Pulcher, Federal Motor Truck Co.; David Ludlum, Autocar company; D. C. Fenner, International Motor Co., and S. A. Miles, National Automobile Chamber of Commerce, a number of other points important to the request for steel.

In reply to requests from the Priority Committee, made earlier this week, the Truck Committee telegraphed all truck makers for information as to:

1—How many completed and unsold trucks for domestic use each has on hand at the factory or in branches of agencies?

2—How many trucks each can build from material at present on hand?

3—For how many trucks materials are required to fill the domestic program for the remaining months of 1918?

4—How many trucks were produced by

years for 1916, 1917, and the first 6 months of 1918 for the United States and the Allies?

5—How many trucks were produced for domestic purposes in the same period?

6—How much steel the aggregate number of trucks produced in that period required?

7—How much rubber the total number of trucks produced in that period used?

8—How much coal was needed per plant per year?

9—What war work other than truck manufacturing each plant was engaged in.

10—The passenger car business of each truck maker.

Inquiries for this information were sent to 144 firms and replies were classified into two series, those who made more than 100 trucks in the 2½-year period and those who made less than that number. It was found that 101 concerns made more than 100 trucks in the 2½ years. These manufactured 276,477 trucks between Jan. 1, 1916, and June 30, 1918, for all purposes, war and otherwise. Figures revealed show that 276,477 trucks required 492,129 tons of steel and 48,537 tons of rubber.

These figures give an average of 1.7 tons of steel and 200 lbs. of rubber per truck.

### Stock Is Only 13,000

Thirteen thousand trucks—one month's supply—are all that the manufacturers have on hand either completed or which can be completed from the parts and material in stock. This small number displayed to the Priority Board the need for prompt relief to the truck industry provided it found the industry worthy.

One of the most impressive statements by Graham was to the effect that elimination of trucks at this time would be seriously injurious to the railroads, war and every war requirement, which he backed up with a detailed account of the functions of the motor truck.

He not only told how important these functions are but went into detail telling that trucks are being used for road work, cantonment provisioning, government warehouses, government and war housing building, by steel firms, express companies, oil companies, army shoe makers, army clothing and wool makers, food product concerns like the meat packers, dairy companies, feeding cantonments, farm products producers, electrical equipment makers, and for shells, government furniture, tobacco growers and packers, coal mines and so forth, and

created a climax by telling that 28 5-ton Mack trucks were purchased this week by the Bureau of Mines, which will deliver every ton of coal this next season to be used by the many Government buildings here.

He enumerated more than 200 companies dealing in the above commodities for war purposes that used thousands of the trucks, and it was through this complete accurate tabulation that the Priority Committee realized how important the motor truck is.

Further, Graham told that 900,000 tons of war and other important merchandise is being hauled yearly between Philadelphia and New York by motor trucks, considerably augmenting the railroads and actually preventing serious railroad congestion. He described the Akron to Boston route used by the Good-year Tire & Rubber Co.

Judge Parker told of the serious need for steel for war work. He stated that the Government could use more steel than will be produced this year, but that

the War Industries Board realizes that certain industries must be properly supplied, and following Graham's discussion and questioning by each side, he agreed that the truck industry is performing exceedingly valuable work and should be given the necessary steel, even if taken from the steel supplies needed for other war work, in order to allow it to increase its value as a transportation medium.

Summed up briefly, he stated that steel would be insured to all truck manufacturers both for manufacture of repair and spare parts and for the manufacture of the trucks demanded by the yearly program on the condition that the truck makers will encourage proper use of trucks and will guarantee that all trucks sold will go to essential use.

In consideration of the urgent Government demand for steel, and the fact that the steel for the truck industry will virtually come from the stocks designed for war purposes, the Truck Committee feels that the War Industries Board has displayed a comprehensive view of motor

truck utility and has agreed to a broad and ample program for it.

As far as can now be gathered the "essential list" of truck users will include a vast majority of existing consumers. Such concerns as department stores were mentioned, and, the Priority Committee taking a reasonable view, admitted that while some of the commodities purchased should be carried home, many others, such as furniture, which is to a great extent an essential commodity, could not be carried and could best be handled by motor trucks.

It was also pointed out that in the case of a truck consumer who was in some such business as jewelry and to some degree making war work, such user could, if not on the essential list, arrange to purchase a truck demanded by his war work by making application possibly to C. C. Hanch or to the Priority Committee, as will be later arranged.

Following is the text of the written presentation sent to the Priority Committee by the Truck Committee:

## *Text of Statement to the War Industries Board*

**T**HIS presentation directs to the attention of the War Industries Board the imperative necessity of giving to motor truck manufacturers an advanced priority that will assure materials and fuel at once.

Such action is urgently needed. Unless it comes immediately there will be an interval of months with virtually no production. This will have the direct result of delaying the war program.

We believe that trucks used in this country are necessary to a swift winning of the war. On this basis alone we ask consideration.

Careful analysis shows 101 motor truck manufacturers must between June 20, 1918, and Dec. 31, 1918, meet a demand for 103,961 trucks, exclusive of those classed as war orders. They have completed, or have on hand materials for 13,044 trucks. This is a shade more than 12 per cent of the demand. The sales of one month will exhaust these 13,044 trucks.

Some makers have no steel whatever.

Steel and other metals must be found for the making of more trucks, unless the nation's commerce and the war program are to be denied the transportation help the motor truck can give.

### **Utility Only Function of Motor Truck**

The motor truck is solely a utility. In this presentation we ask to have it considered separately from the automobile passenger car, which also is a highly important transportation medium, but not used exclusively for business.

The motor truck discharges no function of entertainment.

It furnishes transportation at a time when transportation is a vital material need.

It is conceded that during the war we must have production. The motor truck is inseparably related to distribution of this production.

Congested traffic constitutes a war problem.

Production cannot be brought up to its ultimate unless sources of communication are regular and rapid.

Insufficient transportation did more to retard the rapid and efficient entrance of the United States into the war than could a legion of Huns.

This was proved last winter when to get transportation for coal to send ships to Europe with urgently needed supplies, the Fuel Administration found it necessary to stop all production for five days.

Present shortages of coal and steel result largely from transportation deficiencies.

There are three main sources of transportation, as follows:

- 1—Railway.
- 2—Steamboat.
- 3—Motor Truck.

The enormous growth of business and the extraordinary volume of war haulage have virtually overwhelmed both railroad and steamboat facilities. Both have more freight than they can handle. Only transportation over the highways offers any considerable possibility of immediate relief.

### **All Trucks Help in Winning War**

Almost all trucks serve their war purpose at this time. This applies equally to trucks that are going to the European battlefronts, and to those that will be used in this country.

Many purveyors in war supplies have based their schedules of rapid delivery on the help of the motor truck.

We can furnish your committee instances in which the truck has rendered a four-way service in this work. Such trucks haul away the dirt excavated for the foundations of a new building. Then the trucks bring in material for constructing the building. Next they deliver raw material for making the product. Finally the truck completes its record of performance by carrying the finished articles to the point of delivery. Such trucks are just as valuable in handling war supplies as those used in France.

The United States Government has recognized the importance of the truck both for military and so-called domestic uses.

War Department Order No. 38 established the Motor Transport Service for war trucks. The Highways Transport Committee, serving as part of the National Council of Defense, was organized to divert all possible traffic to the highways.

### **Recognition from the Government**

Government trucks running from cities in the Middle West to the sea coast are constantly establishing the practicability of overland delivery by power vehicles.

The Department of Agriculture has encouraged the application of trucks to the moving of food.

The Fourth Assistant Post-Master General is hauling farm products into the big cities, distances of more than 100 miles by motor trucks. His program, presented in a bill now before Congress, calls for the eventual establishment of 5000 miles of new roads, which will be built from the profits of motor truck haulage of food to market.

Every truck put into service brings the manufacturer nearer his market, brings the farmer nearer the consumer, brings the finished war order nearer the shipping point, facilitates rapid filling of orders, supplies the equivalent of man power lost by withdrawal of soldiers, makes less serious the shortage of horses, and restores gaps in organizations occasioned by deficiencies of labor, material, and transportation.

The farmer, dependent as much on rapid access to his market as on the productivity of his farm, finds the motor truck coming to his aid at a time when he cannot hire farm hands. A truck on a farm will replace from two to four men. It will carry twice the load in half the time. It will make available for other production five acres of land whose yearly crop is now required to feed a horse.

It has been estimated that in view of the greatly increased production of foodstuffs, wheat, rye, barley, oats, corn, beef, pork, mutton, eggs, milk, poultry, and fruit, that 2,000,000 trucks could profitably be used be-



tween farms and markets. Only 450,000 motor trucks are now available for all lines of business. This is only 25 per cent of what could be applied to farms alone.

The use of the truck in so-called rural motor express lines offers the best possible medium through which farmers, truck growers, and dairymen may get to their markets. The truck is also being used for the delivery of live stock to stockyards.

Some makers sell 60 per cent of their trucks to farmers.

Many trucks are carrying raw materials to factories. The absence of the service rendered by these trucks would often mean that thousands of men would go idle for lack of the raw material on which they work.

Some railroads have had to decree that goods consigned in less than carload lots cannot be delivered in any specified time. This ruling results from a shortage of rolling stock and equipment, and a general congestion in freight yards, terminal points and warehouses.

The facilities of express companies for general work have been very much limited through the necessity of using baggage and express cars in troop movement. Therefore the purveyor in food supplies has found himself hard pressed to get transportation. He is placing increasing dependence on the motor truck.

The development of heavy haulage companies operating between big cities and sometimes covering as much as 150 miles in their regular routes, is a significant development. The use of trucks in this kind of work is increasing by leaps and bounds, for the truck is superior for short haul work and in making stops en route. It can deliver supplies to the door of the consignee. It saves time and labor.

In many points it has been found necessary to place embargoes on movement by rail of certain kinds of freight within certain zones. The result has been to divert this haulage to local transportation and transfer companies, the medium in almost every case being a truck.

All that has been gained by the application of these trucks will be lost if there is a shortage of trucks or of parts to keep present trucks in repair. There will be this shortage unless some immediate guarantee of material is given to the whole industry.

### Eighty Per Cent for War Work

Our inquiries, based on a questionnaire sent to various manufacturers, show that about 80 per cent of the output of motor trucks is being used in war work or related war activities.

By war work is meant motor trucks sold to the United States or its Allies, to the Red Cross, to the Y. M. C. A., or for use in cantonments, hospitals, government war buildings. In related war activities we include trucks used in the construction of shipbuilding plants, used in industrial plants where war materials are being made, used by manufacturers or merchants in hauling army supplies, used for motor express lines, including parcel post service, by farmers as motor omnibus or stage lines, together with their application to a variety of other uses relating to the war.

This leaves a comparatively small percentage of trucks applied to unrelated war activities. Even this small percentage involves a service of practical utility and convenience.

In order to make this usefulness clear, we have analyzed the sales of a foremost motor truck manufacturer for the period of 12 months' business in the year 1917. The appended arrangement by percentages will show that virtually every activity therein represented has some relation to the war:

	Per cent
Transfer and transportation.....	13.2
Grocers .....	8.8
Contractors .....	7.6
Oil and gas producers.....	14.3
Coal dealers .....	4.7
Building supplies .....	5.0
Tool and machinery mfgs.....	2.0
Lumber .....	3.5
Meat packers .....	2.7
Chemical manufacturers .....	1.3
Textile manufacturers .....	1.7
Public utility .....	2.3
Road building .....	5.4
Iron and steel .....	2.0
Foundry and forging .....	1.5
Storage and warehouse .....	1.5
Milk .....	1.2
Farmers .....	.78
Ice .....	.93
Ammunitions .....	.39
Mining .....	.24
Stone .....	.1
Brick .....	.39
Gas producers .....	.83
Rubber .....	.73
Hardware .....	.98
Paper .....	.98
Paints .....	.88
Bakery .....	.88
Flour .....	1.2
Sugar .....	.83

On the first of January, 1918, there were 400,000 trucks in the United States. It would be better for this country were the number five times as great.

On the basis of the first 3 months' production, there are indications that 275,000 trucks will be produced in 1918. Fifty thousand of these will go into war use in Europe. Forty thousand will be used to replace trucks withdrawn by the law of wear and tear. This will mean not less than 185,000 trucks for domestic use.

The smallest of these trucks has a capacity of half a ton, the range progressing up to 10 tons with the aid of a trailer.

The potential haulage capacity of the 450,000 trucks now in use can steadily be understood. Allowing an average of 10 tons a day per truck, an estimate which is small since many trucks in short haul work will move as much as 100 tons per day, we have a total of 4,500,000 tons of freight moved per day. Surely there can be no arguments in favor of restricting such a valuable service.

Any delay in obtaining motor truck materials will eliminate the manufacture of parts necessary to keep in repair trucks now in use.

This constitutes a serious problem, for there is constant need of replacement.

### Trucks Are War Necessities

We genuinely believe that the need for trucks and for repair parts is so great that steel and other materials should be found for them, even though it has to be taken from some other items classed as war necessities.

It means little to get rapid motor truck movement of war supplies in Europe if similar rapid movement lack at home.

A way should be found to make to the motor truck industry a definite allotment of a certain percentage of the steel in sight, even though it be necessary to curtail some other war programs. We believe there are others less immediately vital.

This recommendation is made with the full knowledge of its seriousness. It is based solely on our belief that trucks are important to the winning of the war, that the whole system of transportation in this country will be further handicapped unless they are supplied.

It is essential to make a prompt decision for the guidance of manufacturers.

It is necessary in the construction of motor trucks to plan ahead. Even material delivered at once cannot be converted into trucks in less than 3 or 4 months.

Under the present system nothing is definite. A manufacturer cannot lay out his program. He works out his requirement and places an order with the producer of steel. The latter declines to enter it on his books because he is prevented from so doing by regulations of the War Industries Board. Often 90 per cent of material may be available, but lack of the other 10 per cent delays production.

Therefore, valuable time is lost. Transportation needs are constantly growing. Action should be taken so that the motor truck manufacturer may supply his share of that transportation.

We cannot think it is the purpose of the War Industries Board to allow this condition to continue.

It might be possible to work out an arrangement by which each motor truck manufacturer would be permitted during the next 12 months to produce a certain number of trucks per month and to furnish replacement parts for trucks now in service. The allotment per month should be based on the sales of the last year.

Each concern would report the amount of material necessary for its production allotment.

Should the demand for any particular truck increase, this manufacturer should make application to be allowed to purchase an additional volume of material.

In order to present necessary data we have requested motor truck manufacturers, not only those included in the membership of the N. A. C. C., but the unaffiliated as well, to answer these three questions:

1.—How many completed and unsold trucks for domestic use have you at your factory or in the hands of your branches and agencies?

2.—How many trucks can you build from the material at present on hand?

3.—For how many trucks will you need material to fill your domestic program for the remaining months of 1918?

Please note attached a record of the answers [not made public.—Ed.]. These show that the stock of trucks on hand, or the material with which to build trucks, is virtually depleted.

### Bosch Plainfield Plant for Wasson

NEW YORK, July 20—The Plainfield, N. J., plant of the Bosch Magneto Co., which has been purchased by the Wright-Martin Aircraft Co., is to be occupied by the Wasson Piston Ring Co., which will remove its equipment from New Brunswick, N. J., and turn over its plant to the Wright-Martin company. This will give the Wright-Martin company an additional plant in New Brunswick and will permit considerable expansion. The company is at present producing about 500 engines a day in its New Brunswick plant and about forty engines a day in the Long Island City plant. A considerable quantity of new machinery equipment was purchased last week.

### Metzger Heads Truck Line

LANSING, MICH., July 20—William E. Metzger of Detroit has been elected chairman of the committee on motor truck highways and express routes appointed by Governor Sleeper to further the plan of motor truck expresses in this state. Fred Z. Pantlind of Grand Rapids

was chosen vice-chairman and Burt Wickham, assistant secretary of the war preparedness board, secretary. Arrangements for a complete census of the possible routes in the state, through the various chambers of commerce, boards of trade and other civic organizations, will be started at once. Resolutions were also adopted asking a change in the state constitution so that regular rates can be made for the various routes, thus controlling them as common carriers under the railroad act.

#### Vesper's Dealers Learn Status

ST. LOUIS, July 21—More than 80 Vesper-Buick Auto Co. dealers were here Friday to learn of their prospects for the next year. The meeting was called by F. W. A. Vesper, president of the company. Of the meeting Vesper said:

"Our dealers have had an excellent year, and are in great spirits. I called them in to talk matters over with them and to tell them exactly where they stood as to the war.

"I not only went over with them the situation as I have with other dealers in promoting the N. A. D. A. work and the War Service program, but I went into the affairs that interested them intimately as to the relation of our company with the government and what the company sees in the future.

"All I can say of this feature is that the men are loyal to the Buick organization, also to the country, and I can say for the men who gathered here that, come what may, they will not be among the complainers or the slackers."

#### Fremont Garages Band Together

FREMONT, OHIO, July 20—An enthusiastic meeting of several scores of automobile dealers and garagemen Monday evening, July 15, resulted in the formation of the Fremont Automobile Trade Association. Victor Moon, manager of the Ohio Automobile Trade Association, was present and gave the plan of organization which was adopted by the automobile men. The organization was immediately affiliated with the state association. Fred Durwald was elected president and L. G. Post, secretary. The dealers in Fremont will confer with those in Clyde and Bellevue with regards to following the federal plan for closing and conservation. Practically all of the dealers of Fremont are heartily in favor of the move.

#### Logan County Dealers Organize

BELLEFONTAINE, OHIO, July 20—More than 75 per cent of the dealers, garagemen and accessory dealers in Logan County met in this place July 18, and organized the Logan County Automobile Trade Association. A resolution was adopted to comply with the recommendations of the Federal War Industries Board with reference to closing and conservation. George W. Conley was elected president and H. S. Whitney, secretary. Another meeting will be held soon when a committee will report on the attitude of dealers who did not attend the meeting.

## Steel Causes Output of Cars to Decrease

### Production Lower Than a Month Ago—Makers Expect Situation to Clarify in 60 or 90 Days

DETROIT, July 20—The critical steel situation is causing quite a cut in passenger car production in this territory. While the curve of passenger car production is rapidly declining, the curve of motor truck production is showing a steady upward tendency. Comparing production figures of May with those of to-day the average reduction in output of passenger car manufacturers would be approximately 33 1/3 per cent. The greatest cut in production is 50 per cent while many companies are suffering only a 25 per cent decrease.

A number of manufacturers, however, have not felt the necessity of decreasing their output and have been maintaining the same production since May. Among these are Packard, Overland and Hupp. Hupp shipped 1053 cars during the month of June.

Much optimism is expressed regarding the steel situation. Manufacturers are inclined to think that it will be clarified within the next 60 or 90 days and that everything will be running much more smoothly then.

It is reported that the Ford Motor Co. is now producing 750 passenger cars as compared with 1550 during May. The production of the Paige-Detroit Motor Car Co. averages thirty-five cars daily as against fifty during May. Oldsmobile represents a cut in production of 33 1/3 per cent, now making 65 to 70 cars daily. Dort Motor Car Co. production has decreased almost 50 per cent. The Paige factory has 4000 orders for cars on its books which it expects never to be filled.

The cry of nearly all manufacturers is for parts. The parts makers cannot secure enough steel to manufacture their products and in turn supply them to the automobile manufacturers in sufficient quantity for the latter to maintain a uniform production.

#### To Build Royal Tractor

LOUISVILLE, July 20—The Automotive Corp., with headquarters in the Republic Building, has taken over the manufacture of the Royal tractor and will start active production immediately at Napoleon, Ohio. The tractor has two wheels and is driven by means of a pair of lines in the same manner that a team of horses or mules is driven. It is mechanically steered, every operation of the machine being controlled by the two lines, such as turning, going forward or backward, etc. The tractor is listed at \$1,450 and weighs 3000 lbs. Kerosene is used for fuel. The speed is from 1/2 to 8 m.p.h. and the machine will pull three 14-in. plows. According to the manufacturers the tractor can be attached to all present farm implements without any change.

This concern recently purchased the assets of the Sun Motor Car Co., Elkhart, Ind. The old Armory on Seventh Street, Louisville, is being used by the Automotive Corp. as a service department for Sun cars. It has been decided to move from Louisville to some other city, but no date has been fixed.

The concern is a Delaware corporation, of which George G. King of Chicago is president; Robert Crawford of Gary, Ind., formerly president of the Sun Motor Car Co., vice-president; William Hulin of Louisville, formerly secretary and assistant treasurer of the Pan-American Motors Corp., Decatur, Ill., secretary and treasurer, and C. W. Babcock, formerly connected with the Kelly-Springfield Co. of Springfield, Ill., manager of the truck department.

#### Government Wants Fuel Engineers

WASHINGTON, July 20—The Oil Division of the United States Fuel Administration is in need of combustion engineers. These engineers are desired to act as inspectors for each of the following districts: Boston, Providence, New York, Philadelphia, Pittsburgh, Buffalo, Detroit, Chicago, Minneapolis, Tulsa, New Orleans and San Francisco. The inspector for the Oil Division engineers will visit all plants within the district which use fuel oil and natural gas. It is desirable to have men act as volunteers where possible, but the Fuel Administration is prepared to pay a reasonable compensation to men who cannot afford to give their services to the Government. Only men who have had experience in fuel oil and natural gas combustion will be considered.

#### Nash Heads Aircraft Production

WASHINGTON, July 18—Charles W. Nash, president of the Nash Motors Co., Kenosha, and former president of the General Motors Co., was appointed by John D. Ryan, Director of Aircraft Production, as assistant to the director in charge of engineering and production. Nash has resigned his active connection with the Nash Motors Co. for the duration of the war, and will assume his new duties immediately. This appointment, according to Ryan, does not change in any way the organization already effected in the Bureau of Aircraft Production except to give Ryan an additional assistant in charge of the important work of engineering and production.

#### Marathon Men Join Colors

CUYAHOGA FALLS, O., July 20—Three of the executives of the Marathon Tire & Rubber Co. have joined the colors. Secretary Raymond D. Jenks has enlisted in the Gas Defense Service at Washington and reports for duty at once; Purchasing Agent Russell Farley has enlisted in the Ordnance Department and is stationed at the Rock Island Arsenal. Floyd R. Biggs, factory representative in Kansas City has enlisted in the infantry service.

**THE SEATTLE DAILY TIMES, WEDNESDAY EVENING**

**FOR SALE, AUTOMOBILES**

**ROADSTERS**

**1-PASS. STUDEBAKER**

We offer one. It has been overhauled and is ready for the paint shop. We will paint it your own color.

**1-PASSENGER POPE-HART-FORD**

This is a fine, fast speedster. It's a traveler (18 miles an hour). It's all electric equipped, including Gray & Davis starter. \$650 Buys it on Terms.

**1-PASSENGER MITCHELL**

A very late model car. The price on this car will be made right.

**AUTO DEPARTMENT.**  
FRANK WATERHOUSE & CO.  
USED CAR DEPARTMENT.  
PINE AT BELLEVUE.

**JUST A TRIFLE TOO SMALL**

That is the complaint about a lot of the small, cheap cars. You can't get three real fellows into the back seat without a "shoe horn."

**FRANK GOODNESS: Studebaker**

cars have always been built with generously proportioned bodies. The back seat is roomy and comfortable for THREE and the two little jump seats in every car come in mighty handy very often.

**HERE IS ONE OF THEM**

FOR \$750 we offer a beautiful, light, 40 h. p. roomy 1916 Studebaker. It's been overhauled, repainted dark maroon and it's GUARANTEED. VERY LIBERAL TERMS.

**40 OTHER DIFFERENT CARS.**

**WHY THE DELAY?**

Don't you realize that used cars are getting scarce and hard to find? You are using cars.

The scarcity of new cars naturally makes our manager here to get in Used Cars in a hurry-up mission today for Detroit is getting new cars. He is trying OUR ADVICE IS THIS: Come up and see a good Used Car NOW. You can get an AUTO DEPT. FRANK WATERHOUSE & CO. Used Car Dept. Pine at Bellevue.

**\$850.**

You can pay \$250 down and \$50 a month on this car. It's a dandy, 1917, 4-cylinder, roomy, 5-passenger Studebaker. It has 2 extra small jump seats, which will come in mighty handy very often. This is one of the cars which has been overhauled and repainted. It's a beautiful, strong, sturdy car and carries our regular guarantee.

**THAT MEANS A LOT TO YOU.**

**AUTO DEPT.**  
FRANK WATERHOUSE & CO.  
USED CAR DEPT. PINE AT BELLEVUE.

Newly classified ads are run in the daily newspapers. They are changed daily. This feature of the business is one of the most important and receives close attention.

## BUILDING A USED CAR DEPARTMENT THAT PAYS

(Continued from page 7)

promise of satisfaction as written in your guarantee can make or break you. He can give the whole house away in a very short period of time, or he can change all of your boosters into knockers.

Let this employee be selected with care. He must be a man of rare judgment working in entire harmony with the manager of your used-car department and your used-car manager must be a man of absolute honesty, willing and insistent that his customers get what is coming to them and not a dollar more at any time. He must run his used-car department as honestly as though it were his own business—lock, stock and barrel.

### Booms Come in Spasms

Up to last year Seattle has felt "broke." We had not been flush, except spasmodically, since the Klondyke rush and the consequent boom that came with the money brought out of the Klondyke and Nome nearly 15 years ago. Many different things have boomed Seattle in spasms, such as the fortunes made when the new railroads came in a few years ago and caused a lot of real estate tide-land activity. The great re-grades necessary in building Seattle over and preparing the city physically for a great city kept a lot of property owners broke paying assessments.

To-day it's all over. Seattle is the wonder city of the West. She has taken on five years' growth in the last two—all due to the great shipbuilding plants which have sprung up. These plants are permanent. If, after the war, we don't need as many ships, the plants can all be easily changed over into factories for other purposes. The thousands of workers in the shipyards will keep Seattle one of the best automobile cities in the country for 10 years.

To these happy conditions, of course,

we owe a great deal of our success in selling a lot of used cars last year and this year, but the satisfaction of selling these cars right—in the right way—we must attribute to the systems and policies inaugurated Jan. 1, last year. Up to that time we operated no used-car department. Everything was handled together—trucks, tires, new cars, etc. To-day it's all in departments and some one man is in charge and responsible for his own department.

We have a truck sales manager, a Studebaker sales manager, a Marmon sales manager, a manager of the tire department, manager of the used-car department and a sales manager of our newest department, the Lalley-Light.

You might be interested in what our used-car department did last year, and how we operated it.

The used-car department salesroom is in the same building as the other departments. Last year I handled the department with one salesman on the floor, and the six or seven new car salesmen were privileged to sell used cars also. We sold 353 used cars from Jan. 1, 1917, to Jan. 1, 1918. Compared with previous years, we showed a substantial profit on used cars, and every used Studebaker we sold was overhauled and most of them repainted. Getting a lot of cars of your own make into good looking and running condition on the streets is a big asset from an advertising standpoint. Selling your used cars in good condition builds up and tones up your whole business. It gives your whole organization a better standing in public esteem.

### Some Cars We Bought

If you are in the automobile business never turn down a chance to buy any car at the right price to-day. We have advertised for used cars, buying especially the smaller cars, to fill in between larger cars. It helps greatly when it comes to advertising to have a lot of different makes of different sizes. The small car

prospect oftentimes buys a larger car after he looks over your stock.

We of course run different ads every day. One day we feature the small cars, perhaps the next day we try to write an advertisement which will influence the purchaser to look with favor upon the larger cars. I enclose a sample of this type of advertisement run under recent date. These ads are half the battle. We are working on the theory that intensified "inside selling" is the best. No outside campaigning is done except the showing of cars at the shipyards.

We so advertise, or try to so advertise that our cars are half sold when buyers come in. Change the ads every day; keep them newsy so that folks will keep looking for them. If you can't write them, get some man into your organization who happens to possess this happy faculty. He can handle your advertising and publicity and do a lot of other work besides. There are many young fellows just out of school breaking into the newspaper business. Get one of them out of the advertising or news department of one of your daily papers. The automobile business will undoubtedly appeal more to him.

Jan. 1 this year we changed our selling and overhauling system. New car salesmen no longer participate in used-car sales. We now employ two younger salesmen and myself. One of these salesmen was one of our stock men. The other was one of our mechanical men, used for demonstrating around the used-car department. They are being trained. They work on a salary and will soon graduate into selling new cars. This is our best plan, we believe, for getting salesmen—training them under an older man.

We try to select them out of our own organization, always. The plan of cutting off new car salesmen from selling used cars met with a lot of opposition, but we believed that the new car salesmen were not earning their used-car sales. These sales last year were almost all made in the house, to people who came in, in answer to our daily advertisements which we run every day in the *Seattle Times* and *Post-Intelligencer*. We use this kind of advertising exclusively. We keep signs in the windows and a big one—changed every month—over the door and good banners on repainted show cars which we drive down to the different shipyards at noon and 4 o'clock every day.

We have found out that the whole organization has been better off since we cut new car salesmen off from selling used cars. We surely haven't lost any sales for this is our record of sales of used cars this year to date:

January .....	25
February .....	28
March .....	38
April .....	46
May .....	55
Total .....	192

In addition to two salesmen we have one mechanic who wears "store clothes"—except in emergencies—and does our

demonstrating. Of course, he can't do it all. We all work. We also keep three young boys about 16 to 18 busy all the time cleaning up cars. We "Simonize" even the re-painted cars. Although we moved into the largest automobile building in town last year it has already been outgrown. Jan. 1 we rented a mammoth frame structure 25 blocks away, in a district where rent is cheap. It holds about 100 cars. There we warehouse new cars and trucks and there we have opened a big shop which handles our unloading, tunes up and prepares all new cars and trucks ready for the show floor and delivery, and overhauls all of our used cars. No service work of any kind is ever handled at this building. It leaves our main shop—which is much smaller—free to handle regular repair work and service work on customers' cars.

#### Open Auxiliary Plant

This opening, Jan. 1 last, of this auxiliary plant has been the one best thing this company ever did. It has relieved us of almost 50 per cent of the worry incident to the usual automobile establishment. It is perhaps superfluous to say that we have a crackerjack reliable man on the job as superintendent in this outside building.

The automobile department of Frank Waterhouse & Co. is one of many different departments and interests of a great Seattle concern. Waterhouse is a millionaire Seattle Transportation and Shipping man. These are some of the companies which he either operates or controls:

The Traffic Department, operating a big fleet of Oriental and Coastwise ships.

The Coal Department, operating a great coal mine, bunkers and wharves.

The Seattle Taxicab Co., to which has been added the Terminal Transfer Co.

The Camp Lewis Transportation Co., operating all of the automobile transportation at Camp Lewis Cantonment, near Seattle—this company has nearly 100 cars in operation at America's largest cantonment.

The great Vulcan Iron Works.

The Washington Iron Works. A big stevedoring company, etc., etc.

#### Handles Seven Products

The automobile department is more than a department. Under the management of P. E. Sands, formerly president of the Waterhouse-Sands Co., it conducts one of the greatest automobile businesses in the Northwest. This company handles the Studebaker, Marmon, Signal and Denby trucks, Utility trailers, Lalley-Light plants and Kelly-Springfield tires.

We have capitalized the Waterhouse name in our used-car department. We advertise our name and reputation to great advantage, for this name has always stood for over 30 years for the best things in this community, and in this part of the country it is almost synonymous with *business integrity*. We have found that buyers would rather buy used cars with no guarantee from a reliable concern than used cars with a year's guarantee from a firm of doubtful integrity.

## Salina Demonstration Lists Practically Full

### Fifty-two Makers of Tractors and 26 of Accessories Will Exhibit Wares

SALINA, KAN., July 20—The list of exhibitors for the National Tractor Demonstration which is to be held here July 29-Aug. 2, is practically complete and includes 52 manufacturers of tractors and implements and 26 manufacturers of accessories. Following is the complete list to date:

Advance-Rumley Thresher Co.	La Porte
American Tractor Co.	Peoria
American Ford & Tractor Co.	Oklahoma City
Aultman & Taylor Co.	Mansfield
Avery Co.	Peoria
Beeman Garden Tractor Co.	Minneapolis
Bull Tractor Co.	Minneapolis
Bullock Tractor Co.	Chicago
Case T. M. Co., J. I.	Racine
Case Plow Works	Racine
Cleveland Tractor Co.	Cleveland
Dart Motor Co.	Waterloo
Dauch Mfg. Co.	Sandusky
Deere & Co.	Moline
Electric Wheel Co.	Quincy
Emerson-Brantingham Co.	Rockford
Ford, Henry & Son, Co.	Dearborn
Four-Drive Tractor Co.	Big Rapids
Frick Co.	Waynesboro
Grand DeTour Plow Co.	Dixon
Gray Tractor Co.	Minneapolis
Guaranteed Tractor Co.	Chicago
Hart-Parr Co.	Charles City
Hessian Tiller & Tractor Co.	Buffalo
Holt Co.	Peoria
Interstate Tractor Co.	Waterloo
International Harvester Co.	Chicago
Joliet Oil Tractor Co.	Joliet
LaCrosse Tractor Co.	LaCrosse
LaCrosse Plow Co.	LaCrosse
Lyons-Atlas Co.	Indianapolis
Lamson Tractor Co.	New Holstein
Moline Plow Co.	Moline
National Tractor Co.	Peoria
Nilsson Tractor Co.	Minneapolis
Parrett Tractor Co.	Chicago
Peoria Tractor Co.	Peoria
P & O Tractor Co.	South Bend
Port Huron Engine & Thresher Co.	Port Huron
Rock Island Plow Co.	Rock Island
Roderick Lean Mfg. Co.	Mansfield
Russell Co.	Massillon
R & P Tractor Co.	Alma
Simplex Straw Spreader Co.	Kansas City
South Bend Chilled Plow Co.	South Bend
Square Turn Tractor Co.	Norfolk
Three P Auto Tractor Co.	Davenport
Turner Mfg. Co.	Port Washington
Velle Motor Corp.	Moline
Vulcan Mfg. Co.	Evansville
Wallis Tractor Co.	Racine
Waterloo Tractor Co.	Waterloo

#### Accessories

American Manganese Steel Co.	Chicago
Bosch Magneto Co.	New York
Buda Motor Co.	Harvey
Byrne-Kingston Co.	Kokomo
Champion Spark Plug Co.	Toledo
Automotive Parts Co.	Indianapolis
Diamond Chain Co.	Indianapolis
Hyatt Roller Bearing Co.	Chicago
McQuay-Norris Mfg. Co.	St. Louis
Moline Radiator Co.	St. Louis
Timken Roller Bearing Co.	Canton
Spiltdorf Electric Co.	Chicago
K-W Ignition Co.	Cleveland
Hooven Radiator Co.	Chicago
Vacuum Oil Co.	New York
Nuttall Co., R. D.	Indianapolis
Gurney Ball Bearing Co.	Jamestown
Remy Electric Co.	Chicago
SKF Ball Bearing Co.	Hartford
Oakes Co.	Indianapolis
Domestic Engineering Corp.	Dayton
Lalley Light Co.	Detroit
Mutual Oil Co.	Kansas City
U. S. Ball Bearing Co.	Chicago
Universal Light Co.	Salina
Alamo Light Co.	Omaha

#### Connecticut After Glare

BOSTON, July 20—Because Highway Commissioner Bennett of Connecticut has grown tired of hearing complaints about Massachusetts cars entering his State,

whose owners are disobeying the headlight laws, he has made a request to the Massachusetts Highway Commission that the latter body try to remedy the evil. The Massachusetts Highway Commission has planned a crusade to round up the offenders not only in that vicinity but throughout the State. Inspectors will work at night and check up motorists who have no devices on their cars.

#### Forty-Three Submit Headlamp Devices

ALBANY, N. Y., July 20—Forty-three manufacturers of devices designed to control light operating from headlamps have submitted their products to Secretary of State Francis M. Hugo, for testing as provided under the new state law. Under the terms of this measure, such devices are to be tested and if they conform with the requirements of the headlamp law, a certificate of approval will be issued to the manufacturer. It is expected that the names of the manufacturers whose devices comply with the requirements will be made public in the near future.

#### Traffic Producing 300 a Month

ST. LOUIS, July 20—The Traffic Motor Truck Corp. will make the first public exhibition of its 2-ton trucks at the Automotive & Accessory Exposition in Chicago, Sept. 14-21, and expects to arrange with a number of dealers for distribution rights. It is stated that the company is producing at the rate of 300 trucks a month.

#### Ryan Drops Diamond-T

MILWAUKEE, July 20—Distribution of Diamond-T trucks in the state of Wisconsin has changed hands through the sale of the agency by John H. Ryan to the Upham-Schlacht Co. Ryan will continue to distribute in the states adjacent to Wisconsin from new headquarters in Minneapolis and St. Paul. W. P. Upham, president and general manager of the Upham-Schlacht Co., was for 9 years branch manager in Atlanta and Pittsburgh for the Oakland. For 3 years he was manager for the Wisconsin Oakland Co., retiring Jan. 1 to form the Upham-Schlacht Co. with William A. Schlacht.

#### Tires Brought \$2,600 at Red Cross Sale

DETROIT, July 17—More than \$3,000 worth of unsalable tires were contained in the collection thrown on a platform built around the base of the Soldiers' Monument in Detroit and sold at auction last week. The mammoth pile of rubber was sold to an anonymous bidder at the Red Cross salvage sale for the sum of \$2,600 but the bidder immediately turned his purchase back to the Red Cross for re-sale. It was announced by the managers of the salvage department that the rubber will be removed to the department warehouse, sorted and sold at some future date.

#### Chicago Office For Walden

WORCESTER, MASS., July 20—The Walden-Worcester Co., Inc., manufacturer of Walden-Worcester wrenches, has opened a branch office in Chicago.



## Chevrolet Wins Derby on Uniontown Track

Frontenac Pilot Beats Toft by a Minute Despite Several Tire Changes

### INDEPENDENCE DERBY (100 Laps—112½ Miles.)

Driver	Car	Time
Louis Chevrolet, Frontenac		1:11:22.45
Omar Toft, Miller Special		1:12:37.78
Eddie Hearne, Duesenberg		1:13:08.67
Ralph Mulford, Frontenac		1:15:16.37
Tommy Milton, Duesenberg		1:19:16.66
Barney Oldfield, Submarine		

### INTERNATIONAL MATCH RACE (5 Laps—5½ Miles.)

Barney Oldfield, Submarine	3:20
Arthur Duray, Frontenac	

### CHEVROLET-MILTON RACE (5 Laps—5½ Miles.)

Louis Chevrolet, Frontenac	3:17.6
Tommy Milton, Duesenberg	

### MULFORD-HEARNE RACE (5 Laps—5½ Miles.)

Eddie Hearne, Duesenberg	3:35.56
Ralph Mulford, Frontenac	3:35.76

### AUSTRALIAN PURSUIT RACE (16 Laps—18 Miles.)

Denny Hickey, Hudson Special	
Milt McBride, Comet Special	

UNIONTOWN, PA., July 18—Louis Chevrolet, driving against handicaps, won the 112½-mile Independence Derby on the speedway here this afternoon. Twice he was forced to the rear when tire changes cut into his time, but each time he forged ahead, and had a clear lap ahead of the field when he took the last lap, a minute ahead of Omar Toft, who came in second. Eddie Hearne, Ralph Mulford and Tommy Milton finished in the order named, and Barney Oldfield was given sixth position, being checkered off in his 96th lap when he was driving a solo around the wooden saucer. Chevrolet's time was 1.11.22/45, at an average of 95 m.p.h.

Second money was snatched from Eddie Hearne's grasp in his last lap, when his Duesenberg kicked off a shoe beside the grandstand, negotiating some maneuvers which had all the earmarks of a bad spill; but he dropped into the pits without an accident, although a collision with Omar Toft, who was riding Eddie hard for second place, was narrowly averted. A quick tire change was effected in the pits, and Hearne completed the last lap for an easy third.

In the 76th lap of a race which had been heartbreaking for Chevrolet's followers, the Frenchman lost his jinx and had everything his own way, easily holding the lead for the remainder of the grind. He led the field at the go-off, but lost a lap and a half in the 26th round when a front tire dropped. He re-entered the race at the bottom of the ladder, but rapidly forged ahead, and was again setting the pace in the 68th when misfortune

again overtook him. For three laps he held the course with a front tire in shreds, but was finally forced to the pits and again a tail-end position.

Twelve thousand persons witnessed the afternoon's racing program under excellent weather conditions.

Arthur Duray made his bow before the local speed fans, but through no fault of his own was unable to make a good showing. Entered in a match race with Oldfield, he was forced to retire in the third lap with a broken magneto. The machine was temporarily adjusted by Louis Chevrolet between races, but did not figure as a contender, numerous stops being made at the pits for adjustments. Duray definitely retired in the 64th lap.

### Sanford Truck Prices Advance

SYRACUSE, N. Y., July 20—The Sanford Motor Truck Co., has advanced the prices of its 3½- and 5-ton trucks, effective Aug. 1, as follows:

Model	Old Price	New Price
W-35, 3½-ton.....	\$3800	\$3975
W-50, 5-ton.....	4600	4750

### Rural Expresses for Des Moines

DES MOINES, July 20—Within a short time at least three Rural Express Routes will be in operation out of Des Moines. The first will be between Des Moines, Winterset and Indianola. The train service to these two towns is inadequate and backers of the motor express think they will have a fruitful field. Another route will take the express motors to Elkhart, Ankeny and Maxwell while a third company will operate between Des Moines and Boone and Ames.

The Jobbers' Bureau of the Des Moines Chamber of Commerce has interested itself in the establishment of the motor express companies and will lend them assistance.

### Ford Tractor Association Formed

DEARBORN, MICH., July 19—For the purpose of discussing future policies of distribution and deciding the parts question, distributors of Fordson tractors met in Des Moines on July 10. Representatives of forty-five states were present. All distributors agreed to sell parts at uniform prices regardless of the states in which they were located. As a result of this meeting the Ford Association was organized. C. L. Herring of Des Moines was elected president; C. L. Flint of Providence, secretary and C. H. Northway of New York, treasurer.

### Speedometer Coming from Indiana

INDIANAPOLIS, July 20—The Motor Appliance Co., East Moline, has taken over the plant of the Ogden Mfg. Co., Plymouth, Indiana. The new company is formed to manufacture automobile appliances, featuring three specialties: the Marco Speed Recorder, Benson automatic speed signal, and Ogden automobile parts. The company expects to place operating machinery in the Plymouth plant in the near future.

## Milwaukee Decides to Drop Its Booster Tour

Eliminate Function for Conservation Reasons—Trucks Prominent at Fall Show

MILWAUKEE, July 22—In observance of the spirit of the war conservation program of the National Automobile Dealers' Association, the board of directors of the Milwaukee Automobile Dealers, Inc., has decided to omit this year the annual State Fair Booster Tour, usually held during the last half of August, to stimulate interest in the Wisconsin State Fair in September, and more particularly the big fall show which the association holds in conjunction with the fair. However, the fall show will be held as usual, and plans for the exposition on the State Fair grounds at West Allis, Milwaukee County, already are maturing.

The State Fair Booster Tour was the outgrowth of the annual competitive tours conducted by the M. A. D. for 6 or 7 years, beginning in 1908. When the popularity of reliability contests waned, the association continued the annual event as a business-building and advertising proposition with splendid effect. Since the association undertook the active management of the State Fair motor show the tours were designed to give publicity to the fair in general and the motor section in particular.

The State Fair this year will be held during the week of Sept. 8 to 14. The M. A. D. will make motor trucks a more distinct feature this year than before, because of the new interest in these vehicles created by the need for transportation to relieve the railroads of at least a part of their burden. Passenger cars, of course, will receive due attention. The tractor, as yet, has not become a part of the motor section, because these form a distinct section of the State Fair, and this still is directly under the management of the fair board. The motor show is under roof in the largest fireproof building on the fair grounds, while tractors are displayed and demonstrated in the open or under canvas with farm implements.

### Husband Gone; Wife Sells Trucks

BLOOMINGTON, ILL., July 10—Her husband gone to war, Mrs. Frank C. Wemple has taken charge of his truck agency and has met with great success. She handles the largest sized trucks with skill and is able to demonstrate the merits of the machine as successfully as her husband. She handled several loads of coal this week to illustrate the great saving in time over horses.

### Philadelphia Branch for Hurlburt

PHILADELPHIA, July 21—The Hurlburt Motor Truck Co. is to build a factory branch on Broad Street, near Columbia Avenue. The new building will be used for offices and a sales and service station. P. C. Chrysler will be manager.

## *Why Unskilled Labor is Short and How the Shortage is to Be Overcome by the Government*

WASHINGTON, July 20—War industries are at present short 500,000 unskilled workers and coming needs are for between 2,000,000 and 3,000,000 more, according to Nathan A. Smyth, Assistant Director General of the United States Employment Service in charge of its unskilled labor section, who addressed leaders of industry management and labor here to-day.

The conference comprised industry management, and labor authorities from 28 states east of the Mississippi River, who were here to learn the details of the Government's war labor recruiting program, and who will form the community labor boards which will enforce the new labor regulations in the various localities.

It is also said that the demand for skilled workers exceeds the immediate available supply, and before long will require the taking over of every toolmaker and die sinker for war work.

Other speakers, including employment managers of large corporations on war work, told how the United States Employment Service efficiently supplied their labor needs. One example was that of the American National Corp. at Hog Island, for which the Employment Service secured 30,000 men.

The complete program for supplying war labor was outlined. The need for a program was attributed to the growing inability of war industries to secure required labor resulting from:

- 1—Decreased labor supply due to cessation of immigration since 1914.
- 2—Competitive recruiting for labor.
- 3—Restlessness of labor.
- 4—Stripping of war industries through reckless labor recruiting.
- 5—Hoarding of labor supply by individual states.

The program will be enforced promptly by the co-operation of every patriotic citizen; ultimately by the full force of every Governmental department.

The principles of the plan are based on the fact that:

In time of war all labor resources constitute a common supply for the benefit of war industries.

Industries not directly connected with the war should contribute equitable shares of their labor to important war needs.

Equitable distribution of non-war workers can be secured only through central agencies directed by President Wilson to have sole direction of all recruiting of civilian workers in war work.

Recruiting of labor must be solely conducted so as to not take men from war works of railroads or farms.

Movements of labor should be made and placed as near as possible to the demand.

Competitive increase in wages should be prohibited and war wages stabilized so far as possible.

The agencies for the new program will be carried out by recruiting and distribution of labor through the United States Employment Service of the Department of Labor. Paid officers of the service and agents of the Public Service Reserve, the recruiting branch of the service, whose agents are largely volunteers, will conduct recruiting.

Distribution of labor will be controlled by the Employment Service.

Local community boards comprising representatives of labor employers and the service will assist recruiting and distribution.

Control of private, and prevention of competitive recruiting, will be accomplished by the United States Employment Service backed by the power of other Governmental departments.

It is expected that these agencies will:

- 1—Eliminate competitive recruiting promptly.
- 2—Standardize wages as soon as the War Labor Policies Board announces a wage scale.
- 3—Operate successfully through the 500 branches of the United States Employment Service.

### **Government Takes Hold Aug. 1**

The program applying to the recruiting of unskilled labor will be effective Aug. 1. It will handle unskilled labor first because the shortage is more acute, but will shortly take over all war labor problems.

The program will be extended to cover "hiring at the gate" when it is sufficiently organized, and will take over non-war work labor in case competitive recruiting by non-war employers proves injurious to war industries.

In the meantime employers are permitted to do their own recruiting of skilled labor but must not after Aug. 1:

Offer superior inducements to men already employed in war work.

Advertise unless authorized by the Employment Service.

Arrange to advance pay for transportation of labor except with the consent of the United States Employment Service.

Employers not engaged in war work may recruit labor themselves but must not:

Offer superior inducements to workers in war work.

Advertise for labor without the consent of the Employment Service.

The new recruiting program for the present does not cover the recruiting of women workers. It includes only at this time plants whose maximum force exceeds 100 men. Labor may be recruited privately for railroads and farms. War work is taken to mean the manufacture of any product or erection of any structure directly or indirectly connected with the war.

### **Common Labor Still Short**

WASHINGTON, July 20—A slight improvement in the shortage of common labor is indicated by a report for the week ended July 6. The shortage is still nation-wide and critical, however. One hundred and five cities reported a shortage as against 109 for last week. Cities which have common labor surplus increased from 10 to 18 and those with a balanced condition remain the same. There is a demand for skilled boiler makers, machinists, iron workers, lathe hands and tool makers. Mechanics other than machinists are needed in Connecticut, Delaware, Georgia and parts of Texas. There is a demand in the East for farm labor.

### **Dealers Want Women Workers**

BOSTON, July 20—That the positions formerly filled by men are being opened more and more to women is shown by advertisements in Boston looking for capable girls to work into places left vacant by draftees. And with an eye to making the women useful they have to be able to do general office work as well. The following advertisements tell their own story:

#### **WANTED**

A YOUNG WOMAN who is familiar with automobile instruction, who can do stenography and typewriting. Apply to MR. WELBURN, CADILLAC AUTOMOBILE CO., 70 Brookline Avenue.

#### **WANTED—YOUNG LADY**

AS TIMEKEEPER in connection with automobile truck repair department; one with experience preferred; city. R 248, Globe office.

### **Boston Oldsmobile Changes Hands**

BOSTON, July 20—The Oldsmobile Co. of New England has changed hands. The Bryant G. Smith & Sons Co. that has the agency for the Cole and the Elgin has bought it. J. James MacGregor, who has been manager of the Oldsmobile Co. for some years, will continue his affiliation with the line in an executive capacity. It has not yet been determined whether the Oldsmobile will remain in its present building on Commonwealth Avenue, or be brought down to Beacon Street, where the Cole and Elgin are marketed. The Oldsmobile salesrooms are in a desirable location on Commonwealth Avenue, and it has a large service station some distance away, where the wholesale business is also transacted. The Smith company has an entire building on Beacon Street, so that in the interests of conservation some one of the places will be given up.

## Add $\frac{1}{2}$ Cent a Gallon to Price of Gasoline

**Standard, Texas and Gulf Make  
Increase Effective July 20—  
Tidewater Stationary**

NEW YORK, July 20—The price of gasoline has been advanced one-half a cent a gallon in New York City and environs. The Standard Oil Co. has sent out notices to all its customers to the effect that beginning to-day the wholesale price is to be  $24\frac{1}{2}$  cents a gallon. The Gulf Refining Co. and the Texas Co. have both made a similar increase. The Tidewater Oil Co., which has refineries in New Jersey, has not yet advanced the price of gasoline, though an increase is looked for by dealers.

### Coal Production Increases

WASHINGTON, D. C., July 22—Coal production reports display an increase and breaking of records. Alabama reports 412,478 tons for the week ending July 13, an increase of 32,741 over the week preceding. The Big Sandy Elkhorn districts of Kentucky report 157,996 tons for the same week. The previous high record for this district was 137,993, showing an increase of 20,003 tons. Central Pennsylvania reported production increase of 150,000 tons for the week. Uniontown, Pa., reported an 8000 ton increase over the previous records.

### Lightless Nights Again

WASHINGTON, July 22—Lightless nights effective July 24, are ordered by the Fuel Administration for an indefinite period. The order prohibits the use or consumption of coal, gas, oil or other fuel for illuminating or displaying advertisements, announcements or signs, or for the external ornamentation of any building on Monday, Tuesday, Wednesday and Thursday nights of each week within New England and the states of New York, Pennsylvania, New Jersey, Delaware, Maryland and the District of Columbia, and will also apply on Monday and Tuesday of each week in all the remaining states. The order excepts only bonafide roof gardens, outdoor restaurants and outdoor moving picture theatres. Illumination or display by night in shop windows, store windows, or any signs in show windows will be discontinued from sun rise to sun set and will be discontinued entirely on the lightless nights designated by the order. Street illumination will be reduced to that amount necessary for safety. It is anticipated that 500,000 tons of coal per year will be saved by this plan.

### To Windup Aircraft Probe

WASHINGTON, July 22—The examination of Major General William L. Kenly, Chief of the Department of Military Aeronautics, Saturday is expected to conclude the hearings of the Senate Military Sub-Committee investigating aircraft production. The committee will probably draft a report within the next week. It is expected that the report will

not touch upon the alleged extravagances and mishandling of Government money, that phase of the situation being entirely in the hands of the Department of Justice and Charles E. Hughes, President Wilson's special investigator. General Kenly's testimony was not made public, but it may be said it was chiefly discussions of remedies for conditions found by the Committee.

### Detroit Truck Line Starts

DETROIT, July 22—The Inter-City Trucking Service, Inc., recently formed, is operating daily express service between Detroit and Flint and intermediate points. Operating 3-ton Denby trucks, the company sends out trucks from Detroit and Flint every morning—Sundays excepted—picking up and delivering freight on the route between the two cities. Centrally located receiving stations are maintained in the larger towns, where shippers may send consignments at any time. All kinds of shipments are accepted. Connections with other motor delivery companies in the state enable the Inter-City company to receive freight and guarantee prompt delivery to many points in Michigan not covered by its own route.

## Goodyear Accused by Federal Commission

NEW YORK, July 22—The extent to which a national distributor or manufacturer may extend his business policies into the organizations of his dealers may be determined by an action which has been instituted against the Goodyear Tire & Rubber Co. by the Federal Trade Commission. The case will be heard in Washington, Sept. 3.

The Commission charges that Goodyear advertised nationally a chain of "Goodyear Service Stations." The Commission claims these stations are not maintained by the Goodyear company but are simply the establishments of dealers, and it is further charged that the service advertised is not much in excess of that ordinarily rendered by dealers in other tires.

It also is charged that through "arbitrary control over the business of dealers" the company attempts to force dealers under threat of price discrimination to maintain in stock excessive supplies of Goodyear products, to maintain standard prices for these, to report underselling by other dealers, and to specify Goodyear equipment on cars, trucks and motorcycles handled by the dealers. It further is alleged that the company sells tires at dealers prices direct to large truck users on condition that a fixed percentage, usually 90 per cent, of a customer's monthly requirements be filled with Goodyear tires and supplies. Price maintenance also is charged through special agreements with dealers. All of this is said to injure competing manufacturers.

The Goodyear attorneys and managers in this city state that an excellent defense exists against the charges and that many items mentioned in the complaint are quite common in merchandising generally.

## Adopt White $1\frac{1}{2}$ -Ton Instead of Class A

**Standardized Truck Program Includes G.M.C.  $\frac{3}{4}$ -Ton, White  
and Original Class "B"**

WASHINGTON, July 19—The White  $1\frac{1}{2}$ -ton truck, manufactured by the White company, Cleveland, Ohio, will replace the original A  $1\frac{1}{2}$ -ton standardized Army truck, according to authoritative advice received by Motor World.

This announcement definitely settles the standard Army truck program which will include for the AA the G. M. C.  $\frac{3}{4}$ -ton truck, for the A the White  $1\frac{1}{2}$ -ton truck, and for the B the original B  $3\frac{1}{2}$ -ton heavy duty war truck earlier known as the "Liberty truck."

It is understood that the White truck will be known as the A truck and will undergo certain changes in its specifications similar to those made in the AA and recently announced.

No decision has been reached as yet as to the quantity of these A trucks to be ordered, and bids have not been requested of the manufacturers. Major Brown, of the Motor Transport Service, in charge of this work, is making a trip through the Middle West partly to determine the manufacturing possibilities for the A truck.

It will be recalled that earlier there was considerable opposition on the part of some standard truck makers to the first scheme, whereby standard  $\frac{3}{4}$ -ton,  $1\frac{1}{2}$ -ton and 3-ton trucks, designed by engineers called to Washington, were to form the bulwark of the United States Army Motor Transport Service.

There was opposition created by some who felt that the original A and AA trucks were not mechanically correct, and by others who preferred to see their own trucks used by the Army. There was much feeling displayed on both sides for a time.

The disagreement resulted in a reorganization of the Motor Transport Section into the new Motor Transport Service under Colonel Glover, and in a series of tests ordered by Secretary of War Newton D. Baker it is said that the selection of the G. M. C., the White and the original B trucks are the result of these tests, although parties on each side of the controversy claim that the tests were not complete enough or of long enough duration to secure adequate results. The claim is made that no make of truck can be judged by the performance of 1 or 2 models of the type.

### Buick Managers and Distributors Convene

FLINT, MICH., July 22—Branch managers and distributors of the Buick Motor Co. held their annual meeting at the Buick factory last week. There were eighteen branch managers and fourteen distributors present. President W. C. Durant of the General Motors Co., President and General Manager W. P. Chrysler of the Buick company, and E. T. Strong, general sales manager, made addresses.

## Vesper Replies to Service Objectors

(Continued from page 9)

who insist upon an absolute order from the Government as evidence that the suggestions in question are authentic and in conformity with Government desires.

For the benefit of those the National Automobile Dealers' Association gives the following information so that no misunderstanding will exist:

At the time War Service Committees representing the industries of the United States were formed at Washington it was thought important that one committee represent the automobile dealers of the United States, and accordingly a committee of fourteen members was appointed comprising what was considered the most intelligent and active dealers in the country.

This committee was framed, became active and made an exhaustive investigation to determine what could be done to conserve man power and material. After full consideration and careful investigation eight recommendations were submitted by the committee in question to the Commercial Economy Board which, upon thorough analysis of same, approved each and every suggestion in question.

It was next decided by the Commercial Economy Board that the best possible medium through which to carry out these recommendations in their national fulfillment was the National Automobile Dealers' Association, and accordingly, designated it for this duty, which it has unselfishly accepted as its contribution toward the winning of the war.

Automobile dealers and all allied businesses are expected to act upon the suggestions in question in a thoroughly American manner. It might be mentioned at this time that the Commercial Economy Board has never yet found it necessary to issue drastic or explicit orders and has always met with splendid success under this policy. This is worthy of particular comment in view of the fact that there are over 100 industries which have undertaken conservation policies and not a single one has thus far failed to comply fully. It is, therefore, hoped by every thorough American automobile business man that it will not be necessary to issue any absolute order to this industry.

*It would grieve every dealer of caliber to have it said that the automobile men of the nation were the first ones to make it necessary to issue such orders.* As further information to any who may be reluctant to co-operate in this patriotic and thoroughly American matter and in the uplifting of the dealer industry the National Automobile Dealers' Association quotes below excerpts of a letter received by President F. W. A. Vesper, St. Louis, from Melvin T. Copeland, Secretary of the Conservation Division, War Industries Board, Washington, D. C., dated July 6, as follows:

"We are in sympathy with the general purpose of your program. We are very glad to have your committee go ahead and put this through as your contribution to the war . . . we rely upon trade committees and trade associations to furnish advice and suggestions regarding the practical methods of conservation and welcome their voluntary co-operation in carrying out the program . . . your program was drawn

up and given out by your committee at our suggestion . . . we left it\* to you to be carried out on your own initiative . . . we have indicated our general interest and sympathy with what you are doing.

"We sincerely hope you will succeed in carrying out your program. We trust every automobile dealer will be ready to do everything he can in a practical way to help win the war. This is his duty and privilege as a citizen of the United States. *If it appears your committee is going to be unable to put through the program they have undertaken we shall have to call a conference and open the question with a view of making necessary investigation and determine what action to take. We hope your trade will be able to accomplish the results without direct intervention by the Government.*"

The National Automobile Dealers' As-

sociation is giving out this information to show that up to this time there has been no absolute or decisive order requiring the following out of the war service recommendations, either in this industry or in any other. It has never been a matter of compulsion but simply a matter of patriotic effort on the part of the men in the trade for the honor of their industry. It would be a catastrophe, to say the least, were it found that it required positive orders before the automobile dealers would consent to take the steps so manifestly necessary to the conservation program in times like these and a shame not easily lived down.

The National Automobile Dealers' Association therefore expects the co-operation of every trade loyal automobile dealer, garage owner, service establishment and oil filling station in the United States in the present movement.

## Memberships Come Rapidly to Headquarters

(Continued from page 9)

the force, more typewriters and larger accounting systems are catching up, and the president's department will soon be able to cope with any offensive that may be planned.

The present spirit of the motor-car dealers of the country cannot be better illustrated than by the following items gleaned from the correspondence reaching the president's office during the past week.

Ste. Genevieve, Mo., advises their entire county following out war service recommendations.

Mobile, Ala., wired permission to affiliate with the national association; Philadelphia sent in more than twenty applications in addition to their previous quota.

Wichita Falls, Texas, is forming a dealers' association, and expects to co-operate through the national association.

Ten counties in Iowa immediately surrounding Burlington express their desire to affiliate in the national association.

Boston advises exceptional membership campaign taking place throughout all New England States and expects to go "over the top."

Duluth, Minn., joined the national association in a body.

The Richmond Automobile Dealers' Association telegraphed through the Secretary, Finney, that all dealers, garages, tire men and accessory dealers are following out war service recommendations, and all dealers in the vicinity are affiliating in the national body.

McAlester, Okla., advises it has formed a local association, and in doing so went a hundred per cent for affiliation in the National.

Cleveland sent in more than thirty additional applications from that district.

Indianapolis contributed nearly thirty, also following war service recommendations.

Corry, Union City and Waterford, Pa., voted hundred per cent for National association membership; Conneaut, Ohio, did likewise.

Madison, Wis., advises the National association it has released all automobile dealer employees who are physically fit for work in the harvest fields.

The Des Moines Chamber of Commerce advises as follows: "This Bureau, which includes all branches of the industry, has favorably endorsed all war service recommendations."

Memphis, Tenn., dealers advise one hundred per cent in following out the war service recommendations.

Petis County, Mo., adopted the war service recommendations one hundred per cent.

Hiawatha, Kan., advises "entire county adopts war service recommendations."

Dallas dealers one hundred per cent in compliance.

Dubuque, Iowa, district adopts war service recommendations and is almost unanimous in affiliation throughout the district in the National Automobile Dealers' Association.

Pittsburgh Automotive Association advises as follows: "We are meeting with great success in this territory in putting war economy request into effect."

Brooklyn Motor Vehicle Dealers' Ass'n has passed resolution to adopt unanimously the recommendations.

Muskegon, Mich., association adopted the recommendations one hundred per cent.

Champaign and Urbana, Ill., with their surrounding districts adopted the recommendations as a whole.

In addition to the above many small towns have advised they are closed tight and are tendered for memberships in the National association.

J. W. Kirkpatrick, El Paso, Texas, was appointed commissioner by President Vesper for the National association in undertaking to carry out the war service recommendations in the El Paso district.

Mason City, Iowa, is one hundred per cent for war service recommendations.

A peculiar coincidence illustrating the interest shown by dealers recently is well portrayed in letters received from



Apartado, Juarez Avenida, Mexico, and even Oshawa, Canada. The last few days, cities in Canada and Mexico have desired affiliation in the National association and offered to co-operate in the fulfillment of the war service recommendations. It is impossible for the National association to accept the membership of the parties mentioned in view of the by-laws which prohibit such an affiliation.

This week President Vesper and Secretary Peake will visit Buffalo, Newark, Boston and several other eastern cities, where it has been assured exceptional meetings will take place.

#### Organize to End Complaint

ST. LOUIS, July 21—Since the Sunday and night closing rules were made effective here there has been loud complaint from a minority that St. Louis car owners were going to East St. Louis for repairs and gasoline. East St. Louis, it happens, is within the Chicago jurisdiction, but to silence the kickers who thought they were losing the sale of a few gallons of gasoline Robert E. Lee, Automobile Conservation Commissioner for St. Louis, suggested to W. F. Rothe of the Rothe Motor Co. that a meeting of all motor car interests be called for Friday night at the Retail Merchants' Association Hall. Rothe got busy and had representatives of 28 firms present.

Lee took with him to the meeting President F. W. A. Vesper of the N. A. D. A. and Joseph E. Schlecht of the St. Louis Automobile Manufacturers' and Dealers' Association. Lee called the meeting to order and made a short talk on organization and its benefits. Vesper spoke for forty minutes on the present perils and needs of the motor car trade. Schlecht told what had been accomplished in St. Louis. Lee then asked if those present were willing to organize. They were, and the following officers were selected:

President, Paul Tissier, St. Clair Motor Co.; vice-president, Jule Siefert, Siefert Auto Co.; treasurer, W. F. Rothe, Rothe Motor Co.; secretary, Thomas W. Jennings, Jennings-Sullivan Rental Co.; directors, the officers and Dr. H. Little, East Side Overland Co.; J. N. Byerle, Byerle Auto Co.; Joseph Stegmeyer, Rapid Service Co.

Night and Sunday closing with full observance of the war service rules was adopted by a full vote.

#### Garagemen in K. C. Organize

KANSAS CITY, July 20—The conservation program in Kansas City is being put into effect very successfully, with larger co-operation from garagemen as time goes by.

For a few days, there was an apparent conflict and disposition on the part of some garagemen to oppose the efforts of the local association of garagemen to secure co-operation. This problem was solved by the organization of a second association of garagemen which, like the first, has pledged itself to the conservation program.

## Boston Gets 127 for N.A.D.A. Membership

### Best of New England's Dealers Support Conservation and Organization Movement

BOSTON, July 20—In one week through speedy work the 10 men comprising the committee of Boston dealers who have started a campaign to make New England 100 per cent perfect in membership in the National Automobile Dealers' Association report that it has tabulated 127 firms throughout the territory that have sent in checks and filled out application blanks.

There are a number of others who have stated that they would join, but the committee has given out for publication only those who have actually paid in their dues. And they represent big firms in the major cities.

At the meeting next Friday when President Vesper will be here to address them it is certain that many others will join either before or after they have heard him talk. An order has been given to the Hotel Brunswick to lay covers for at least 250; and an option has been taken on a larger room that can accommodate 500 diners, and if hard work will count it is possible that many may be on hand.

The committee has held daily meetings, and by means of a card index it has been possible for it to check up what different dealers are doing with their organiza-

tions throughout the territory. If there is delay a telephone call or personal visit is made to stir the dealer up. Sub-committees have made motor trips to Worcester, Springfield, Providence, Portland and other centers and talked to the dealer organizations in those places with the result that the associations are coming in bodily and getting others to join also.

This intensive work will be continued every day until and including Friday, when by that time there will be few dealers who have not been requested to join either by personal call, telephone, night letter or circular in which the advantages of the membership has been fully pointed out. A publicity committee working with the newspaper men is pounding away in the papers not alone in Boston, but in other cities through the New England territory, and these stories are helping to bring in additional members.

According to the plans of the committee the meeting is not going to be a continuous, long-winded affair. The addresses will be confined to that of President Vesper and Executive Secretary Peake and one or two of the Boston men. It will deal with all the problems now confronting the dealers and the value of organization.

Following the meeting it is possible that a committee may make a personal call upon Congressman O'Shaughnessy of Rhode Island, who is on the Ways and Means Committee, for a conference on what the motor industry represents and to give him suggestions about plans for the raising of revenue.

## MECHANICS FOR FRANCE

The Y. M. C. A. wants AT ONCE 500 mechanics for service in France.

Good emergency repair and overhaul men are wanted—over the draft age.

Go to the nearest Y. M. C. A. and ask for particulars about the service.

The Y. M. C. A., operating with General Pershing, does a work that can't be described here. *It is regarded as exceedingly important by the War Department.*

It takes cigarettes, eats, cheer and comfort to the men and makes them better fighters. To do this work it has 500 trucks and out of the 500 there are 200 TO-DAY THAT CAN'T RUN BECAUSE THERE IS NOBODY TO FIX THEM. *They are out of commission. The war is being handicapped. The American army in France is suffering because there are not enough truck mechanics in France.*

So—

*If you are a good mechanic—*

*If you are over draft age—*

*If you have wanted to get "over there" but have felt you couldn't go—*

*Here is your chance—and it's a bird.*

**ASK THE NEAREST Y.M.C.A. SECRETARY ABOUT IT**

## Prominent Tradesmen Assume New Duties

### Resignations and Promotions Place Workers in New Places

C. P. Henderson has been appointed western sales manager for the Lexington Motor Co., Connersville, Ind. From 1909 to 1911 he was identified with the Henderson Motor Sales Co., Indianapolis. In 1912 he formed the Henderson Motor Car Co. He has until recently been general sales manager of the Cole Motor Car Co., which position he resigned to take up his present work.

J. E. Roberts, formerly assistant sales manager of the Cole Motor Car Co., Indianapolis, has been appointed general sales manager of the organization to fill the place left vacant by the resignation of C. P. Henderson, who has gone to the Pacific Coast to live and has assumed the western sales representation of the Lexington Co.

C. O. Dixon, for several years with the motor accessory department of the Shapleigh Hardware Co., St. Louis, has been named manager of the newly opened branch of the Standard Roller Bearing Co. of Philadelphia, at 3102 Locust Street, St. Louis.

J. M. Hamilton, recently on the staff of the Overland Automobile Co., St. Louis, has been made territorial representative for the Davie Motor Car Co. of that city.

William A. Scharen, who was connected with the advertising department of the Packard Motor Car Co. and the Timken-Detroit Axle Co., has become advertising manager of the Tractor Bearings Division of the Hyatt Roller Bearing Co., Detroit.

C. F. Batchelder, for the past two years assistant sales manager of the Dort Motor Car Co., and for 10 years previous sales manager of the John Deere Plow Co., St. Louis, has been made eastern division sales manager of the Olds Motor Works, Lansing. He succeeds N. W. Barton, who has been transferred to New York City to assume duties with the Oldsmobile Co. of New York.

George L. East has resigned as assistant sales manager of the Olds Motor Works, Lansing, Mich., to become associated with the Gulf Oldsmobile Co., New Orleans, in the distribution of the Oldsmobile throughout the State of Louisiana. His connection with the Olds company dates from 1907, and includes 5 years as advertising manager, several years as wholesale representative and one and one-half years as assistant sales manager.

Homer Beckenbach, formerly assistant sales manager of the Cleveland branch of the Willys-Overland Co., has entered the service as inspector in the drop-forging department of the Ordnance Department in Detroit.

Edwin L. Lewis, who has been Assistant Passenger Traffic Manager of the Reading Railway for more than a year, and identified with railroading for the last 6 years, has associated himself with the Packard Motor Car Co. of Philadelphia as assistant manager of the truck sales department under William F. Roth.

W. F. Seel has been appointed head of the sales promotion department of the Frank O. Renstrom Co., San Francisco, distributor of Premier and Grant cars and Bethlehem and Atterbury trucks.

R. Wessing has entered the parts department of the Frank O. Renstrom Co., San Francisco, distributor of Premier and Grant cars and Bethlehem and Atterbury trucks.

E. F. Howells has been appointed district sales manager for the Sanford Motor Truck

Co., Syracuse. His territory will include New York and Pennsylvania. He was formerly Philadelphia manager for the Chase Motor Truck Co.

H. O. Penland, who has been sales engineer for the U. S. Ball Bearing Mfg. Co., with headquarters in Cleveland since the first of the year, has been appointed manager of the Cleveland office.

H. A. Van Tine has become affiliated with the Hurlburt Motor Truck Co., New York, as factory manager.

H. M. Prewett has been appointed district manager of the Detroit branch of the Willard Storage Battery Co., in charge of service station sales. S. S. Jenkins, formerly district manager at Detroit, has been made district manager in charge of manufacturers' sales, with headquarters at Detroit.

Joseph L. Hardig, for several years with the Curtis Advertising Co., has been appointed director of advertising of the Remy Electric Co., Anderson, Md.

### Goodrich Has Training School

AKRON, July 19—As part of the government's plan to educate 90,000 men for specialized work in American Universities this year the B. F. Goodrich Rubber Co. has provided a special classroom and working benches for the selects. The men make daily tours of inspection through the tire-making departments; listen to lectures by department heads; repair tires that have been through every possible manner of abuse; learn how to demount and mount rims quickly; learn what to avoid in adjusting a rim to a wheel, and read manuals and books dwelling on the cars and repair of tires.

The soldiers are drilled in quick and effective methods of repairing not only automobile and motorcycle fabric tires but also cord tires for automobile and airplane use. This work is in co-operation with the University of Akron.

It is the plan of the government to establish scores of American tire repair stations back of the lines of the Western front where American ambulances, officer's cars, signal corps cars, dispatch rider's motorcycles and all pneumatic tire vehicles and planes may instantly and efficiently have their tires cared for.

## More Boston Dealers Cut Down Overhead

### Two of Them Add Accessories Departments and One Takes on a Truck Converter

BOSTON, July 20.—More evidence that Boston dealers are looking for additional means of adding to their revenue, thereby cutting down their overhead, is found in announcements just made. The King Motors, Inc., that has both the King and the Elcar, has just taken on the agency for the Alderholdt Moisture Carburetor, and Manager Rennert has had a big sign painted to go on the front of his building announcing the fact. The New England Velie Co. has opened an accessory corner in its salesrooms, and Amos J. Shorey, manager, has placed his son in charge of it during the school vacation. The Chandler Motors of New England is to have the Duplex convertible unit for used cars, which had been handled by the Columbia Tire & Top Company.

### Albany After Return Loads

ALBANY, N. Y., July 20—Plans for the establishment of a Rural Express Route, a Return Loads Bureau, and the development of highway transportation in keeping with the recommendations of the Council of National Defense were made yesterday at the meeting of the Highways Transportation Committee appointed by the New York State Defense Council to carry out suggestions of the Washington authorities.

The committee comprises Peter G. Ten Eyck, Albany, chairman; Frederic E. Foster, State Defense Council, secretary; Edwin A. Duffey, State Commissioner of Highways; Frank M. Baucus, Troy, president of the New York State Automobile Association; George C. Diehl, Buffalo; H. R. Odell, Newburgh, and E. V. Stratton, E. V. Stratton Motor Co., Albany.

### Automotive Securities Quotations

	Bid	Asked		Bid	Asked
*Ajax Rubber Co.....	63	65	*Maxwell Motor Co., Inc., com..	29	29½
*J. I. Case T. M. Co., pfd.....	80	86	*Maxwell Motor Co., Inc., 1st pfd.	56	57
Chalmers Motor Co., com.....	3	6	*Maxwell Motor Co., Inc., 2d pfd.	22½	23
Chalmers Motor Co., pfd.....	20	30	Miller Rubber Co., com.....	111	113
*Chandler Motor Co.....	84½	85½	Miller Rubber Co., pfd.....	93	95
Chevrolet Motor Co.....	132	135	Packard Motor Car Co., com.....	118	125
*Fisher Body Corp., com.....	37	38	Packard Motor Car Co., pfd.....	94	97
*Fisher Body Corp., pfd.....	91	92	Falge-Detroit Motor Car Co.....	18	20
Fisk Rubber Co., com.....	55	58	Peerless Truck & Motor Corp.....	14	17
Fisk Rubber Co., 1st pfd.....	98	102	Portage Rubber Co., com.....	111	113
Fisk Rubber Co., 2nd pfd.....	78	83	Regal Motor Car Co., pfd.....	..	..
Firestone Tire & Rub. Co., com.	108	111	†Reo Motor Car Co.....	13½	15
Firestone Tire & Rub. Co., pfd..	92	95	*Saxon Motor Car Corp.....	7	8
*General Motors Co., com.....	153	156	Spring'd Body Corp., com.....	..	..
*General Motors Co., pfd.....	81	82	Springfield Body Corp., pfd.....	..	..
*B. F. Goodrich Co., com.....	47	47½	Standard Motor Construction Co.	12	14
*B. F. Goodrich Co., pfd.....	97	100	*Stewart-Warner Speed. Corp.....	57½	58½
Goodyear Tire & Rub. Co., com.	163	167	*Studebaker Corp., com.....	46½	46½
Goodyear Tire & Rub. Co., pfd..	96½	97½	*Studebaker Corp., pfd.....	82½	90
Grant Motor Car Corp.....	2½	3½	Swinehart Tire & Rubber Co.....	50	58
Hupp Motor Car Corp., com.....	37½	4½	United Motors Corp.....	32½	33
Hupp Motor Car Corp., pfd.....	80	85	*U. S. Rubber Co., com.....	61½	62½
International Motor Co., com....	30	33	*U. S. Rubber Co., pfd.....	103½	105
International Motor Co., 1st pfd.	55	65	*White Motor Co.....	42½	42½
International Motor Co., 2d pfd..	35	43	*Willys-Overland Co., com.....	20	21½
*Kelly-Springf'd Tire Co., com...	50	51	*Willys-Overland Co., pfd.....	81½	82½
*Kelly-Springf'd Tire Co., 1st pfd.	82	87	Standard Parts Co.....	60	62
*Lee Rubber & Tire Corp.....	19	20	*At close July 18. †Listed N. Y. Stock Exchange. †Par value \$10.		

# Mistakes by Garagemen Have Hurt Their Tractor Business

*Important Point Is That They Let the Farmer Know They Have the Best Place to Have Service Done*

KANSAS CITY, July 20—Two mistakes by garagemen in agricultural districts are said to have been responsible for much loss of profitable tractor-repair business.

1—*They have failed to let the farmer know that they can competently handle his tractor adjustments and repairs.*

2—*They have sent bills to the farmers for whom they did tractor work in the field, itemizing the hours.*

The loss of business to garagemen is not so important as the loss of working time by the tractors. Tractor service men are scarce, and those in the field cannot possibly reach the tractors on which service is requested as promptly as the local garageman could reach them.

The farmer's chief concern is that his tractor get into operation again as quickly as possible. But apparently the farmer does not of his own initiative think of the local garageman as capable of taking care of the tractor; he telegraphs the tractor distributor for a service man.

Many tractor distributors have already adopted the policy of answering the owner with the suggestion that he call his local garageman. A large proportion of the service men are busy now delivering tractors and showing the new owners how to run them.

## Good Money for Garageman

This is an important service, which nobody else can perform. The repairing or adjusting of a tractor can be handled by the local mechanic. And the garageman can make good money out of such jobs.

The service man of a tractor distributor usually carries with him only a small kit of tools—any garageman can easily carry in his motor car the same equipment for emergency repairs, get to the idle tractor within an hour of the call, and get the tractor to running. A garageman could easily fit up a repair car with hoists, welding outfits, and so forth, and handle practically any repair right in the field.

If garagemen had visited the farms to look at the tractors and inform the farmers that they could handle tractor repairs, the farmers would not be filling on the garagemen for such repairs instead of seeking the help of service men of distributors.

Some distributors believed that the solution of tractor service lay in designating local repairmen to handle service calls. In many cases this plan has not worked out satisfactorily. One distributor has said that local service men so designated have taken longer to get to the place of call than distributors' serv-

ice men would take from Kansas City.

In this dilemma, tractor distributors are tending more and more to appoint automobile dealers as agents for tractors, believing that motor car dealers will be prompt in giving service and will feel the responsibility more keenly than garagemen who are merely given the opportunity for tractor repair jobs.

The departure of so many tractor

## Saloons Gone, Would Tax Commercial Cars

**Los Angeles Proposes to Make Up Lost Revenue in Unusual Manner**

LOS ANGELES, July 20—Having voted an increase in wages for firemen, policemen and numerous other employees of the municipality without taking into consideration the reduced revenue due to the elimination of saloons and other revenue producing sources the City Council is now trying to take care of the impending deficit in the treasury by placing a special license tax on commercial motor vehicles.

Despite the fact that the various defense councils have recommended increased use of motor trucks as a relief for shipping conditions and a proposition now is under way to build a special motor truck road between the city and harbor at a cost of about \$12,000 per mile, some members of the council take the attitude the truck must not only carry its own load but a big share of the city's tax burden as well. An ordinance now before the council provides:

For every person, firm or corporation conducting, managing or carrying on the business of running, driving or operating any automobile, automobile truck, automobile tank wagon, or any other motor-propelled vehicle used for the transportation of baggage, express, freight, household goods, merchandise or materials for hire—for each such vehicle of not more than 1-ton capacity, \$6 per year; not more than 2-ton capacity, \$12 per year; not more than 3-ton, \$18; not more than 4-ton, \$24; not more than 5-ton, \$40; not more than 6-ton, \$60, and for more than 6-ton capacity \$80 per year. That the license fees shall apply to and be paid by any person, firm or corporation delivering any commodity for which a fee is charged. That the license fees shall apply to any person, firm or corporation operating any such vehicles in connection with any commercial business in the city of Los Angeles.

An additional fee is provided for every vehicle drawn by or attached to a motor-

dealers throughout the country to war service is also a factor in causing distributors to turn to established motor car dealers for their agencies.

The second mistake of garagemen in handing tractor calls—itemizing the hours on the job—has caused discontent on the part of the farmers.

The garageman has sent in his bill to the farmer in the same way he would to a city customer, mentioning the number of hours on the job. In the case of a call to a farm this involves a certain time, often around an hour, going and coming. The farmer knows how long the mechanic actually worked on the tractor—and the extra time looks to him like gouging. Elaborate explanations do not usually smooth away the ill feeling. A flat price for the work—even though the garageman may have figured this price on the basis of time consumed—would have avoided the friction.

driven vehicle ranging from \$3 for a 1-ton trailer to \$40 for one of more than 6 tons' capacity. Manufacturer's rating determines the capacity under the meaning of the ordinance.

It is estimated that between 6000 and 7000 motor propelled or trailer vehicles would have to be licensed under this ordinance. This would be in addition to the several taxes now being paid. The Motor Car Dealers' Association, the Motor Truck Club, an organization of truck owners and others are opposing the ordinance. It has been suggested that in lieu of it a general wheel tax be imposed. The city attorney has stated there is a question if the city's charter would permit of a wheel tax. Business firms owning fleets of from 10 to 40 trucks are showing vital interest in the matter and admit that if the tax is imposed it simply will mean passing it along to the general public to bear through increased costs.

## Elizabeth Has Motor Transportation Club

ELIZABETH, N. J., July 20—The Elizabeth Transportation Club was formed here last week and so far has moved over 32 tons of merchandise and expects to bring the total to 60 by the end of the week. So far all the hauling has been between this city and Philadelphia. The club has as its object the furnishing of manufacturers and merchants an efficient motor trucking service at rates comparing favorably with other similar trucking associations. A return loads bureau has been established so that the benefit of a return load rate can be utilized. The officers are: Robert J. Wilson, president; Reliance Motor Car Co., vice-president, and Weimar Storage & Trucking Co., secretary-treasurer.

## Saxon Moves Service Department

DETROIT, July 20—So that work can be handled more efficiently the service department of the Saxon Motor Car Corp. has moved its quarters to the main plant.

## War Board Asks for Inventory of Steel

**Wants to Know How Much Industry Has on Hand Before Regulations Are Worked Out**

WASHINGTON, July 17—Hugh Chalmers, representing passenger car makers, held a conference to-day with the War Industries Board on the question of steel for the manufacture of passenger cars, and the result of the conference is that the War Industries Board has asked for a complete inventory from passenger car makers showing the number of partly completed cars, number of parts, as well as the quantities of steel on hand for passenger car production at the present time.

Filing of these inventories will probably require 2 or 3 weeks and in the interim nothing can be done on the steel situation. It is expected that these inventories will show that the industry has not received steel on a basis of the 30 per cent reduction which was agreed upon between the War Industries Board and the industry some months ago and which agreement was to continue until Aug. 31, 1918. It is also expected that these inventories will show unbalanced stocks in many factories which will call for reasonable shipments of certain kinds of steel in order to complete the production of certain numbers of automobiles.

### Decision After Investigation

It is expected that the War Industries Board will announce its decision concerning further shipments of steel to the automobile industry after a thorough examination of these inventories has been made.

There seems to have been some counter opinions concerning the steel the automobile industry has been using for some months. The makers have been operating on a 30 per cent curtailment but it is stated that since the 30 per cent agreement was entered into there have been later rulings on steel distribution and that the industry has not been receiving this allotment of steel.

Chalmers asked the War Industries Board for a 60 per cent allotment of steel as compared with the 70 per cent allotment which the industry is operating under at present. No definite information could be given on such a request and nothing will be forthcoming until the inventories have been examined.

It has been known for some time that considerable inconvenience has been caused by the unbalanced inventories and several factories have received good co-operation in securing quantities of steel in which they were lacking and by means of which they have been able to carry on production that would otherwise have been impossible.

During the last week the steel manufacturers have met with representatives of the War Industries Board for a general survey of steel requirements. It seems utterly impossible to get a com-

plete budget of the requirements of the Government. New shipbuilding yards are being erected and it is impossible to estimate their requirements. The amount of ship tonnage which it is possible to build this year is being cut down and now the steel makers feel that a sane estimate of the Government's requirements will soon be available.

At present the steel capacity for this year is running on a basis of 43,000,000 tons of ingots. This will produce between 33,000,000 and 34,000,000 tons of finished steel. The shell steel requirements will approximate 5,000,000 tons for the year. These figures of ingot production represent a gain of approximately 5 per cent in steel production as compared with a year ago.

In the steel industry there is a greater amount of building operation going on than formerly, new mills for ship plate production being erected and additions to others made. Many believe that the requirements for shipping will not be nearly so great as the estimates because there are not enough ship-building ways to possibly utilize the steel plates which have been estimated in the requirements for this year.

The steel makers are as anxious as possible to proportion steel to all of the different industries which are designated as non-essential to war work. The steel makers are also continually asking for a war budget of steel requirements and realize the almost impossible task of securing such. Their policy seems to be that of constantly cutting down estimates of Government requirements.

Estimates that the Government requirements for the coming 6 months will be 20,000,000 tons are generally discounted to an extent. Steel production during the same period will, however, approximate very closely 16,500,000 tons of finished steel.

### Corporation Starts Rural Express Line

MASON CITY, IOWA, July 20—A corporation has been formed here with a capital stock of \$50,000 by Mason City business men and a number of trucks are to be purchased and placed on several routes leading out of the city to over 38 towns. The towns covered by the routes have a population of 89,900, there are 394 miles of highway, 1876 farms adjoin the routes and there are 5628 farms within a mile of the routes. The total farming population along the routes is nearly 23,000. It is estimated that 2100 freight cars can be released for war materials by covering these points by trucks.

### Highway Officials to Gather

WASHINGTON, D. C., July 20—A combined convention of the American Association of State Highway Officials and the Highways Industries Association will be held in Chicago during one week in October, the exact date not having yet been set. This is the first time there has been a joint highway convention made up of all State engineers and other officials, together with the manufacturers of various road materials as well as all kinds of road-building machinery.

## Tractor an All-year Product in Southwest

**Machines Have Been Moving Into Kansas City Territory Since Jan. 1—Use Drive-aways**

KANSAS CITY, July 20—The steady stream of tractors leaving Kansas City warehouses, or ordered direct from factory for Kansas City territory, is a striking evidence of the nearly-all-the-year-round demand for this equipment.

Farm machinery demand is usually congested into short periods, previous to the immediate need for the use of a particular item of machinery.

But tractors have been moving since Jan. 1 quite steadily, after only a short lull during the winter. Even this lull was partly taken up by dealers' orders, though the uncertainty of supplies had hampered distributors' efforts in this direction.

A notable feature of the movement this summer has been the resourcefulness of distributors in overcoming the handicap of freight congestion on steam railroads. The Kaufman-Parrett Tractor Co., distributor of the Parrett tractor, has been delivering tractors to owners at the Kansas City warehouse since Jan. 1 on all orders within 30 miles.

The company had to effect an understanding with the city officials to allow the driving-away of tractors through the city streets, the street commissioner having issued an edict against tractors on the paved streets. The Parrett tractor without lugs has smooth wheels, however, and the rule was abrogated therefore in its favor.

### Drive Them Home

Owners save the freight from Kansas City by driving tractors out—and they get the equipment onto their farms on the day of purchase. The tractor company saves the labor of delivering tractor to the freight station and loading it on a car—perhaps \$5 or \$6 and the time of two or three men for a morning.

The net saving to all concerned is considerable even when the tractor company could drive the tractor to the freight car. Frequently, too, a tractor has to be hauled on a truck, in which case there is the additional expense of the truck, and the withdrawal of that truck from other service temporarily.

The J. I. Case Co. has sent many tractors into the territory on motor trucks this summer. Recently three tractors went to Eudore, Kan., 37 miles, one each on three successive days. These tractors were put into immediate service in the fields. H. O. Woodward, for instance, put his tractor into the wheat field at once, and with two men cut 80 acres of wheat in five days, Mr. Woodward driving the tractor, one man riding the binder and one stacking.

The succession of operations on the farms has made possible the instant utility of the tractors thus secured, by drive-



away or truck. Some were needed for spring plowing—then for hauling, then for cutting wheat, for running separators, and now for early plowing of wheat land.

The soil is very dry, in the middle of July, for plowing. While the tractors can turn it, farmers in some sections do not want to plow until after a rain, when the earth will be better pulverized. The farmers are buying the tractors, however, to be sure they will have the equipment for use immediately when the proper time comes, without losing time, and without risking delivery.

#### Assemble Fordsons in Hamilton, Ohio

HAMILTON, OHIO, July 12—A deal has been practically completed by which a large assembling plant for the Fordson tractor will be erected on a tract near Hamilton. The tract consists of the property of the Rossville Hydraulic Co., and includes important water rights. It is the plan of the Ford people to expend in the neighborhood of \$1,000,000 in the erection of the plant. When completed, about 5000 people will be employed. The name of the Rossville Hydraulic Co. will be retained, with a new corps of directors. They are Henry Ford, president; Edsel Ford, vice-president; Brandon R. Millikin, secretary; and W. B. Mayo and George S. Rentschler, directors. The assembling plant will be operated under the name of Henry Ford & Son, Inc.

#### Tractors Relieve Labor Shortage in North Carolina

GREENSBORO, N. C., July 15—Tractors are beginning to play an important part in relieving the labor situation on the North Carolina farms. Tractors are being purchased and equipped with an operator and mechanic and placed in communities. The farmers guarantee a reasonable acreage for plowing. Such co-operation means much to the small farmer, who is unable to purchase a tractor for his individual use. It also saves a large amount of time and labor in breaking the land.

#### Tractors Coming From Texas

SAN ANTONIO, July 15—Construction of the first unit of a large plant here for the assembling and manufacture of farm tractors and motor trucks will begin soon, according to the announcement of Robert Rand of Dallas, who with associates have organized the Lone Star Motor Truck & Tractor Co. The company has purchased a site of 20 acres upon which the proposed plant will be built. The contract for the first group of buildings to cost about \$70,000 has been awarded. The plant when finished will cost about \$280,000.

#### Woelfel Joins Zinke

CHICAGO, July 22—George Woelfel, Jr., formerly secretary to Commissioner William M. Webster, of the National Association of Automobile Accessory Jobbers, has joined the Zinke company, this city, as special representative.

## Dealers Indignant at Rumors in Newspapers

### Featuring of Suggested 10-Cent Tax on Gasoline Kills Sales by Dozens in Los Angeles

LOS ANGELES, July 20—When, a few days ago, a local newspaper printed a special dispatch from Washington, delineating upon the recommendations of the Treasury Department and saying a tax of 10 cents per gallon on gasoline and \$50 per motor car was "advised," it had the effect of an exploding bombshell in the midst of the motor car business.

Orders for cars were cancelled right and left and there was scarcely a dealer who did not feel the effects within 24 hr. One dealer reported six orders killed and in each instance responsibility was placed on the alleged tax measure. One of these intending purchasers was merely awaiting the completion of his garage to take the car and pay cash for it.

The outcome has been that the Dealers' Association probably will take some action in the nature of a request to the newspapers to refrain from publishing injurious stories. Automobile editors of the various papers have been asked to call the attention of managing editors to the disastrous effect such stories have on the trade. One dealer said that whenever any laws or taxes are put into effect the motor vehicle trade will be found abiding by them to the extreme but when matters are only in the stage of proposal or suggestion publication creates a panicky feeling among buyers that is not warranted by the final enactment.

When the gasoline check and motorless Sunday story was sprung several weeks ago, it was followed by a falling off in business but to nothing like the same extent as that of the present.

#### Tire Repair School for U. S. Soldiers

AKRON, July 12—One of the most interesting and important phases of military activity in and around Akron are the United States Army Tire Repair Schools, where soldiers are given instruction in building and repairing casings and tubes.

In the case of the Miller Rubber Co. the class is conducted in the service station across the street from the factory. Each month a class of enlisted men puts in 4 weeks of work. There are 6 hours to work each day. The detachment is under command of Capt. A. E. Aub, and is quartered, when not in the classroom, in barracks on the campus of Akron University.

When the 4 weeks of tire study have been concluded each man must pass an examination of twenty-nine questions concerning tire building and repairing. He is then graded according to his proficiency.

There were 107 men taking the course at various plants in Akron in June, and the average grade was 90 per cent. In the Miller school, tire men of long experience

are instructors for the soldier-students. The Miller students are never allowed to handle customers' tires.

When the enlisted men first enter the class they are confronted with a huge pile of old tires of every variety—cord, molded, wrapped, and so on. There are also innumerable tires for their inspection and study. After two or three lectures the men begin to tear apart the tubes and casings and learn what they are made of. Then comes the actual repair work.

An aged casing that has been skillfully repaired until it will again render service, is subjected to terrible abuse until the average layman would pronounce it fit for nothing but the scrap pile. This casing is turned over to a couple of students, and they are told to repair it so it can be used again. The results are often so remarkably well attained that they are amazing.

### Meiklejohn's Garage

(Continued from page 15)

for an economy of space, the acme of convenience and for great facility in handling this part of the business.

The other special feature is the self-opening door which gives access from the street to the service room of the garage. This door is used only in winter and bad weather and is almost entirely automatic. It has proved its value and convenience. It was designed by T. W. Meiklejohn, president of the company, and is a most ingenious and satisfactory piece of equipment.

The company keeps two service cars constantly in commission, each manned by thoroughly competent mechanics, who spend their entire time on the road in the territory covered by the company. Car owners are visited periodically, their cars carefully inspected and such precautionary measures as will anticipate and prevent future trouble are taken.

Meiklejohn intends to put the same ideas of service into the tractor business that he has employed so successfully in the motor car business. For instance: he is at the present time developing a specialized motor truck which will be used in tractor service. This will have the requisite speed to get quickly to any point in the territory where a tractor may have gotten into difficulties. It will be equipped with the necessary appliances for quick field repair, and where the trouble is so serious as to demand garage treatment, the truck, by a special power arrangement whereby the truck engine itself is used, will load the tractor quickly and easily onto itself and transport it to the garage and back again to the field.

An extra tractor also will be maintained in service and when a farmer's tractor must go to the garage for repair the service tractor will be taken to his farm on the truck and loaned to him until his own is again ready for work. It is the intention of Meiklejohn to extend this service also to every dealer in the state who handles tractors, it being a condition in every sales contract that such a service tractor be maintained for such emergency service.

Revisions Are  
Made in Table  
Every Week

# MOTOR WORLD GUIDE

Specifications  
of the  
Leading Cars

Model	Motor	S. A. E.	Ignition	Carburetor	Starting	Clutch	Gearset	Wheelbase	Tires	Rims	2-Door Passenger	5-Door Passenger	7-Door Passenger	Coupe	Sedan	Limousine	Detachable Top
ABBOTT 6-42	6-31x4 29.4 Remy		Stmbe	Remy	DD	3	122	34x4	SS		\$1875	\$1875	\$1875	\$2375			
ALLEN 41	4-31x5 22.5 Conn		Stmbe	A-Lite	D	3	112	32x4	SS		\$1145	\$1195	\$1295	\$1395			
AMERICAN 34	6-31x5 23.4 A. Kent		Stmbe	Zeith	DD	3	122	32x4	SS		1645	1595	1695				
ANDERSON 30	6-31x4 25.3 Conn		Zeith	Wetha	DP	3	120	33x4	SS		**1465			2165			
400-F 40	6-31x5 29.3 Boech		Stmbe	Wetha	DD	3	120	33x4	SS		**1925						
APPERTON 8-18	8-31x5 33.8 Remy		Johnson	Bijur	DP	3	130	34x4	SS		12850	12800	13650	4250	4500		
8-18 Mercury																	
AUBURN 6-42	6-31x4 25.3 Remy		Rafid	Remy	DP	3	120	34x4	SS		1445	1445					1595
6-42	6-31x5 29.4 Deico		Rafid	Deico	DP	3	131	35x4	SS		1785	1785					2085
AUSTIN 18B	12-21x5 39.6 Deico		Stmbe	Deico	D	6	142	34x4	QD		3750	3750	4000	4550	5000	5250	
BEAL 18	4-31x4 22.5 A. Kent		Zeith	Dyneto	D	3	114	31x4	QD		1995	995					
BIDDLE 41	4-31x5 22.5 Eisman		Zeith	G & D	DP	4	121	32x4	QD		2600		12650		4100	4000	
BOUR-DAVIS 18B	6-31x5 29.4 West.		Stmbe	West.	DP	3	118	33x4	QD		1785						
6-31x5 22.5 West.			Rafid	West.	DP	3	118	32x4			1680						
BREWSTER 24	4-31x5 25.6 Boech		Zeith	U.S.L.	C	3	125	34x4	SS		7200	7700		8300	8400	8500	
BRISCOE 24	4-31x5 16.3 Conn		Buick	A-Lite	C	3	104	30x3	C		885	885					
BUICK 24-35	4-31x4 18.2 Deico		Marrel	Deico	C	3	106	31x4	C		795	795			1185	1845	
24-35	6-31x4 27.3 Deico		Marrel	Deico	DP	3	118	34x4	SS		1265	1265					1265
E-49	6-31x4 27.3 Deico		Marrel	Deico	DP	3	124	34x4	SS				1495		2175		
CADILLAC 57	8-31x5 31.2 Deico		Own	Deico	D	3	125	35x5	SS		3220	3220	3220			4395	
CASE 6-30	6-31x5 29.4 Wetha		Rafid	Wetha	D	3	125	35x4	SS		1875	1875	1875		**2375		
CHALMERS 6-30	6-31x4 25.3 Remy		Stmbe	Wetha	DP	3	117	32x4	SS		1565	1565	1615	1975	2250	2925	
CHANDLER 870	8-31x4 39.2 Deico		Stmbe	Deico	C	3	127	33x5	SS		11795	11875	1795	2395	2495	3095	
CHEVROLET 90	4-31x4 21.7 Remy		Zeith	A-Lite	C	3	102	30x3	C		640	685		1060	1040		
90	4-31x5 21.7 Remy		Zeith	A-Lite	C	3	108	32x4	SS		995	995			1475		
D 37	6-31x4 36.4 Remy		Zeith	A-Lite	C	3	120	34x4	SS		11550	1550					
COLE 870	8-31x4 39.2 Deico		Stmbe	Deico	C	3	127	33x5	SS		2695	12595	2595	3795	3595		
COLUMBIA 34D	6-31x4 25.3 A. Kent		Stmbe	W. Lard	DP	3	115	32x4			11495	1450			2395		
COMET 340	6-31x5 29.4 Deico		Miller	Dyneto	D	3	125	33x4					1685				
COMMONWEALTH 37	19.6 A. Kent		Carter	Dyneto	DD	3	115	32x3	SS		1995	1095					
CROWN 37	19.6 Conn		Zeith	Dyneto	D	3	114	32x3	SS		1085	1155	1095		1425		
CUNNINGHAM 8-31x5	45.0 Deico		Stmbe	West	D	3	132	35x5			14600	15100			6400		
8-31x5											14600	15100					
DANIELS 2	8-31x5 33.8 Wetha		Zeith	Wetha	D	3	127	34x4	QDR		3500	3500					
DAVIS 3-25	12-3 x5 43.2 Deico		Orn	Bijur	DD	3	128	35x5	QD				4300	4300	5650		
PAIGE 6-39	6-31x5 23.4 Remy		Stmbe	G & D	D	3	117	32x4	SS		1515	1515		2850			
6-35	6-31x4 29.4 Remy		Rafid	Remy	D	3	127	35x4	SS				1985	2850			

PAN-AMERICAN										
G-5	6-31x5	23.4 G & D	Rafid	G & D	D	3	120	33x41 SS	1650	
PATERSON	6-46	6-31x41 25.3 Delco	Stumb	Delco	C	3	120	32x4 C	11495 1265 1495	
PEERLESS	56	8-31x5 33.8 A.Kent B&Ball	A-Lite	DD	3	125	35x41 SS	12550	2550 3050 3250 3690	
PIERCE-ARROW	32-C-4	6-4 25 38.4 Bosch	Own	Washa	C	4	134	34x41 QD	4900 4900 4900 5900	
48-B-4	6-41x5 48.6 Bosch	Own	Washa	C	4	142	35x5 QD	5400 5400 5500 6800		
66-A-5	6-5 27 60.0 Bosch	Own	Washa	C	4	147	36x51 QD	10400 6400 6500 7500		
PILOT	6-45	6-31x5 23.4 Delco	Titan	Delco	DP	3	120	32x4 SS	11395 1395	
PREMIER	6-C	6-31x5 27.3 Delco	Johnson Delco	DP	3	125	35x41 SS	12585 2585	3585	
PRINCESS	36-F	4-31x41 22.5 Splitdr	Schobler Delco	D	3	108	32x31	875 875 875		
REGAL	J	4-31x41 19.6 A.Kent	Carler A-Lite	C	3	108	30x31 QD	795		
REO	6-31x5 30.4 Remy	Rafid Remy	DD	3	126	34x41 SS	1550 1550			
4-41x41 27.2 Remy	Johnson Remy	DD	3	120	34x4 SS	1295 1295				
REVERE	4-41x6 30.6 Bosch	Stumb	Bijur	DD	4	130	32x41			
ROAMER	C-6-44	4-31x5 29.4 Bosch	Stumb	Bijur	DP	3	128	32x4 SS	2475 12475	
D-4-75	4-4 25 35.6 Bosch	Stumb	Bijur	DP	3	128	32x41 SS	3250		
ROSS	8-31x5 33.8	W.Land	DD	3	130	35x41 SS	11850	1850		
SAXON	6-21x41 19.8 Remy	Stumb	Wagner	DD	3	112	32x31 SS	935 1045	1395	
S-4	6-31x41 25.3 Delco	Delco	P	3	118	32x4	1495			
SIX-42	8-31x31 22.0 Remy	Zenith	Wagner	DD	3	120	32x4 SS	11255		
SCRIPPS-BOOTH	8-31x31 21.7 Remy	Zenith	Remy	C	3	110	30x31 C	1835		
DAH	6-21x41 19.0 Remy	Marvel	Remy	C	3	112	32x4 SS	11195 1195		
S-39	6-41x61 45.9 Eismann	Nwmb	Bosch	D	4	143	37x56 QD	Chassis 7000		
SIMPLEX	6-4	6-4 25 38.4 Bosch	Rafid	Washa	DD	4	139	35x5 QD	4200 14325 4100	5250 5125
SINGER	8-31x5 33.8 Remy	Zenith	Washa	D	3	127	34x41	12450	2450	3500 4000
STANDARD	2-4 25 12.8	Delco	P	3	118	32x4	17750 2800			
STANLEY	4-31x5 22.5 Remy	Schobler	Washa	DD	3	119	34x4 SS	11935 1835 2175 2400 2575 3200		
STEARNES	8-31x5 33.8 Remy	Rafid	Washa	DD	3	125	35x41 SS	12700	2700	3200 3875
SK14	6-31x41 25.3 Delco	Stumb	Delco	P	3	118	32x4 SS	1685 1585 11650	2085	
STEPHENS	8-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
STUDEBAKER	6-31x5 29.4 Remy	B&Ball	Wagner	C	3	119	32x4 SS	1585 1585 11585		2185
SH-4-40	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		
SH-4-50	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-60	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-70	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-80	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-90	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-100	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-110	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-120	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-130	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-140	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-150	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-160	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-170	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-180	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-190	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-200	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-210	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-220	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-230	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-240	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-250	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-260	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-270	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-280	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-290	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-300	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-310	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-320	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-330	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-340	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-350	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-360	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-370	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-380	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-390	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-400	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-410	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-420	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-430	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-440	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-450	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-460	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-470	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-480	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-490	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-500	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-510	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-520	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-530	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-540	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-550	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-560	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-570	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-580	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-590	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-600	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-610	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-620	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-630	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-640	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-650	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-660	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-670	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-680	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-690	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-700	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-710	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-720	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-730	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-740	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-750	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-760	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-770	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-780	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-790	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-800	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-810	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-820	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-830	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-840	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-850	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-860	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-870	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS	1125 1125		1685
SH-4-880	6-31x5 36.0 Remy	B&Ball	Wagner	C	3	126	33x41	1985		2185
SH-4-890	4-41x5 30.6 Delco	Stumb	Remy	C	3	120	32x41 SS	2550 12650 2750		
SH-4-900	6-31x5 29.4 Remy	Schobler	Wagner	C	3	112	32x31 SS			

## Air Mail Expansion Planned

WASHINGTON, July 17—Rapid expansion of the air mail service, with eventual country-wide scope, will begin Aug. 1, when the air mail service will pass from the War Department to exclusive post office control. College Park Aviation Field, 8 miles from Washington, has been selected as the new Washington terminal. Motorcycle delivery will be made from that point to the city. Army aviators returning from the war will be given the preference in this service. The first flight under the new system will begin Aug. 1, when it is possible that another reduction in service charges from 6 cents per ounce to 3 cents per ounce with the usual 10-cent special delivery charge will be announced. It is also planned to shortly inaugurate an 8-hour aerial mail route from Chicago to the East.

## Wilmington Divided on Short Hours

WILMINGTON, DEL., July 20—The motor trade in Wilmington is divided on the short-hour proposition. The majority, apparently, favor closing nights and Sundays, but there are some who contend that for special reasons they cannot see their way clear to adopt the plan. The chief objection appears to come from some of the accessory men, who claim that Saturday night is their best business period. Then many of the gas stations hold that it would be an inconvenience to the touring public to be shut up tight at nights and on Sundays.

This situation developed at a meeting under the auspices of the Wilmington Automobile Association, and the result was the appointment of a committee, representing all branches of the trade, including accessories and service, to see if there is some common ground upon which all can agree to shorten the open hours.

## New Detroit Return Loads Bureau

DETROIT, July 20—Selling highway transportation to shippers and consignees by the employment of highly trained investigators and the establishment of fixed rates for highway haulage between Detroit and points within a radius of 180 miles, are the outstanding objects of the Detroit Transportation Assn., which is being formed here by John F. Myers, formerly of the firm of Houghton & Myers, Inc., distributors of Stegeman trucks in the Detroit territory.

The membership of the new association will be made up of individuals and concerns with either motor trucks or horse wagons to hire. Private truck owners whose vehicles are idle for part of their time will also be eligible. The association will be financed by its members, who will pay certain sums as monthly and eventually yearly dues. These dues have not yet been determined, but will be decided upon by the number of members in the association, the idea being to set the dues at a figure which will just pay the operating expenses, but not form any sinking fund. Under this proposed plan of organization, the larger the number of members, the smaller the dues.

# This Place of Business

**Closes at 6 P. M. Daily**

**All Day Sundays and Holidays**

As all Automobile, Tire, Accessory Dealers, Garages, Repair Shops, Gasoline Filling, and Battery Service Stations, etc., have been requested to do by the

## WAR ECONOMY BOARD WASHINGTON, D. C.

Tri-City Automobile Trade Association

*Eighty-five dealers of Davenport, Rock Island and Moline have gone on the war service basis recommended by the National Automobile Dealers' Association and are using a 7 x 11-in. sign to inform the public as to the closing hours. Other recommendations include the cash basis and limited service*

Besides attempting to fix highway rates between Detroit and its adjacent cities, the association will also attempt to secure return loads for all of its members, and to act in the capacity of a Return Loads Bureau.

## Ford Heads Labor Umpires

WASHINGTON, July 20—Ten citizens appointed by President Wilson to act as umpires in labor controversies which cannot be settled by agreement of the members of the War Labor Board include:

Henry Ford, Detroit; Matthew Hale, Boston; James Barry Covington, Washington; Charles Caldwell McChord, Washington; V. Everit Macy, New York; Julian William Mack, Chicago; Henry Suzzallo, Seattle; John Lind, Minneapolis;

William R. Wilcox, New York; Walter Clark, Raleigh.

These men will assist in settling the arguments between employers and employees when the War Labor Board is unable to reach that end. Up to this time there has been no need for such umpires, and the President's appointment is merely to meet a possible future problem of this kind.

## Rural Express Line in Chattanooga

CHATTANOOGA, TENN., July 20—The Glaser Hauling Engineering Co. has entered the rural express business on a large scale. A large terminal has been opened in this city and trucks will be operated over routes to Knoxville, Atlanta, Birmingham, Memphis, Nashville and other cities.

## Coming Events

Syracuse, N. Y.	Tractor demonstration.....	July 27
	State Food Commission. F. R. Teall in charge.	
Salina, Kan.	National Tractor Farming.....	July 29-Aug. 2
	Demonstrations. A. E. Hildebrand, Manager.	
*Orange County, N. Y.	Tractor demonstrations. New York.....	Aug. 1
	State Food Commission; Calvin J. Huson, Director.	
Fulton, N. Y.	Tractor demonstration (near Fair Grounds).....	Aug. 6
	State Food Commission. E. W. Underwood in charge.	
*Columbia County, N. Y.	Tractor demonstrations, New York.....	Aug. 15
	State Food Commission; Calvin J. Huson, Director.	
Indianapolis, Ind.	Automotive Show, Indiana State.....	Sept. 2-7
	Fair, Indianapolis Automobile Trade Association; John Orman, Manager.	
Chicago, Ill.	Automotive and Accessories.....	Sept. 14-17
	War Exposition, Municipal Pier. H. V. Buelow, Managing Director.	
Canada	Tractor demonstrations.....	Sept. 17-18-19
Dallas, Tex.	Seventh Annual Automobile Show.....	Oct. 14-17
	Texas State Fair.	
Dallas, Tex.	Seventh Annual Texas Automobile Show.....	Oct. 14-27
	Texas State Fair.	
Chicago, Ill.	Convention and Automotive Equipment Exhibit.....	Oct. 28-Nov. 2
	National Association of Automobile Accessory Jobbers.	

\*Date and place not definitely fixed.



Women as Mechanics in This Issue

# MOTOR WORLD

for

## DEALERS, JOBBERS AND GARAGEMEN

Volume LVI  
No. 5PUBLISHED WEEKLY  
NEW YORK, JULY 31, 1918Ten cents a copy  
Two dollars a year


**Strom**  
BEARINGS  
FORMERLY U.S. BALL BEARINGS

The illustration features a large, detailed ball bearing in the foreground. In the background, a stylized industrial scene is depicted with smoke rising from a factory, a bridge, and a ship. The entire scene is framed by a dark, textured border.

U. S. BALL BEARING  
MANUFACTURING CO.  
(Control Patent License)Palmer St. and Kolmar Ave.  
CHICAGO :: :: ILL.  
U. S. A.

## Powerful on Soft Ground

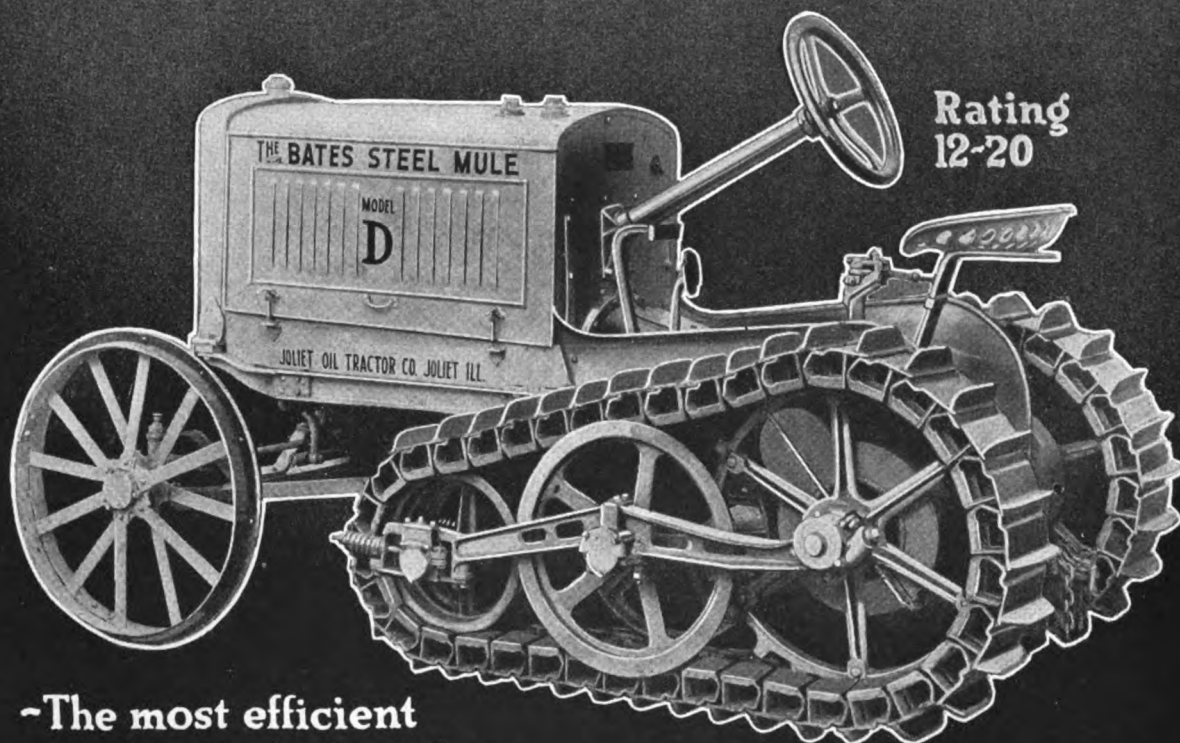
The twin crawlers of the Bates Steel Mule lay a firm runway on the soft ground, which runway is held from slipping by twenty-four cleats. This runway has a ground pressure of less than  $3\frac{1}{2}$  pounds per square inch and, being geared to it, the tractor pulls as big a load on soft ground as it can on firm footing.

The absence of slipping is one of the many factors that go to make the Bates Steel Mule unusually economical in fuel.

This feature, combined with the unit construction, Timken roller bearings, hardened cut gears running in oil and heavy duty valve-in-head kerosene motor, contributes to the great efficiency of this tractor.

*We want the best dealer in each community. If you are that man we have an attractive proposition for you.*

**JOLIET OIL TRACTOR CO.**  
327 Jackson Street Joliet, Illinois



**Rating  
12-20**

~The most efficient  
tractor in America~

# MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

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# "NORMA"

## PRECISION BALL BEARINGS

(PATENTED)



Service—the supreme test of men and of machines—the thing expected and exacted from all—the measure of value of an individual and of a commodity—the times have given the word a new and higher significance. And service today means more than adequacy to ordinary demands—it means an available reserve equal to any emergency.

Guided by experience—warned by previous failures—builders of dependable ignition apparatus and lighting generators standardize on "NORMA" Precision Bearings—knowing that "NORMA" serviceability helps any machine measure up to the service conditions which the times impose.

• Be Sure—See That Your Electrical Accessories Are "NORMA" Equipped

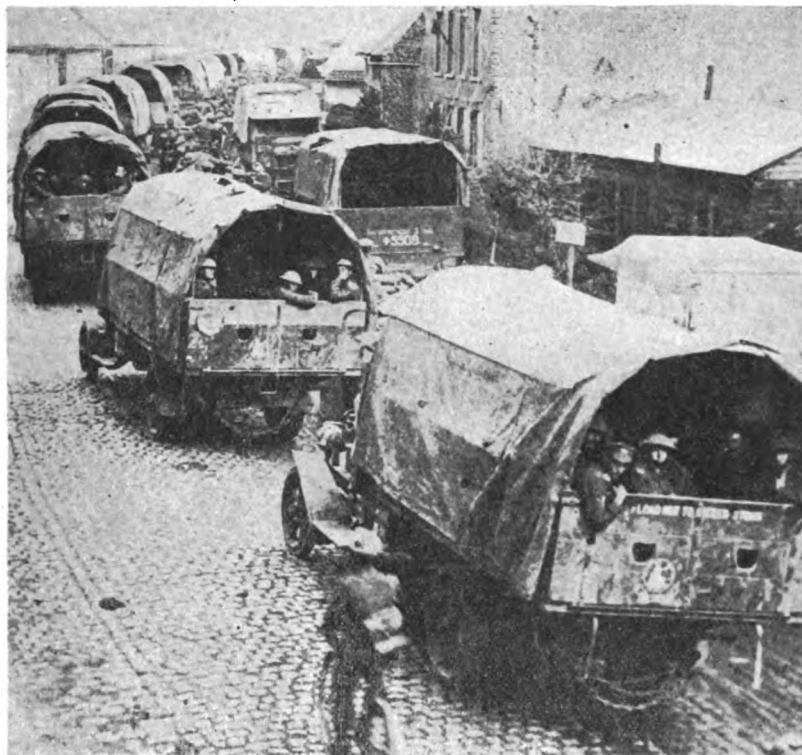


## THE NORMA COMPANY OF AMERICA

1790 BROADWAY 364 NEW YORK

Ball, Roller, Thrust and Combination Bearings

When writing advertisers please mention Motor World—it identifies you.



## The Test of War

The crucial test of war service is the most rigid test to which a motor truck can be subjected.

In war service a truck must have the vitality to perform its duty against odds—without hesitation—with increased speed—over rough roads—day and night—with absolute certainty. It must be *dependable* to the last degree.

Selden Trucks have proved equal to the test of war. In France—in England—in Russia—in army camps in this country—wherever there has existed a need for positive, efficient, dependable motor haulage—Selden Trucks can point to a long list of accomplishments—and in many instances unusual accomplishments.

Thousands of business concerns know the economy of Selden Trucks—for they are profiting daily by their use.


*1 to 5 Ton Worm and Internal Drive Models. Write for full information.*

*Buy a SELDEN—It's ALL Truck*

**SELDEN TRUCK SALES COMPANY**

ROCHESTER, N. Y., U. S. A.

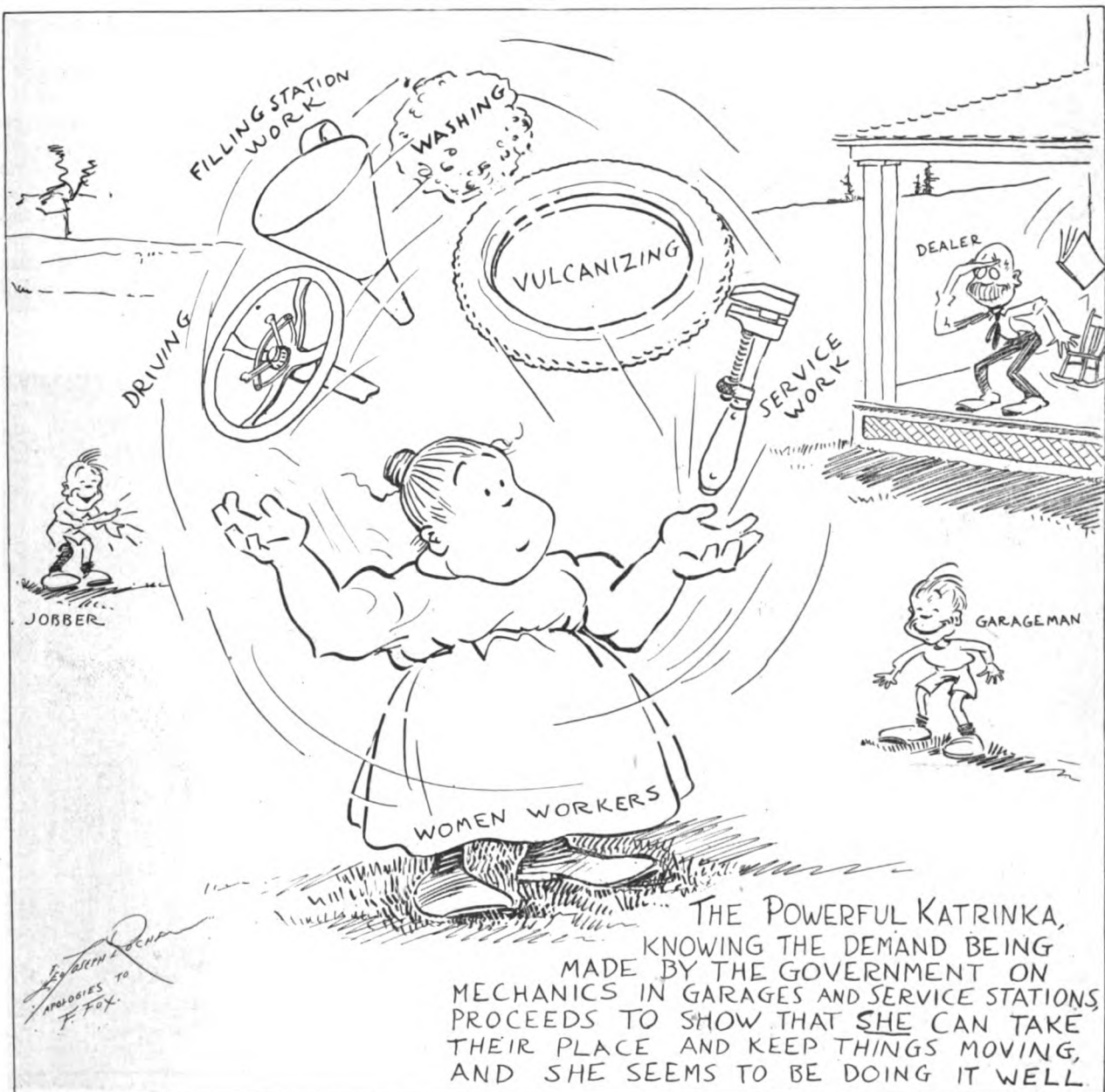
**Selden Trucks**





**No. 5**

# Welcome, Katrinka!



# Women Help Solve Labor Problem



*These girls are "stripping" a newly arrived car. Every loose article is removed by one of the girls and checked up by the other, and finally stored away in a special locker until the car is repaired*

**M**ORE than a million women are engaged in munitions work in England. Thousands are engaged in industry in America in lines that have heretofore been monopolized by men. And dealers must look to women to solve the labor problem. Already Alvan T. Fuller, the Packard dealer in Boston, is employing women in his service station. They have proven capable of many tasks heretofore done by men, as the pictures on these pages show.

The dealer who isn't investigating his business to find what work women can do in his organization is not in step with the times. He is overlooking one of the factors in the solution of his labor problem. These seven different tasks illustrated here mean that seven men can concentrate on work that is essentially for men.



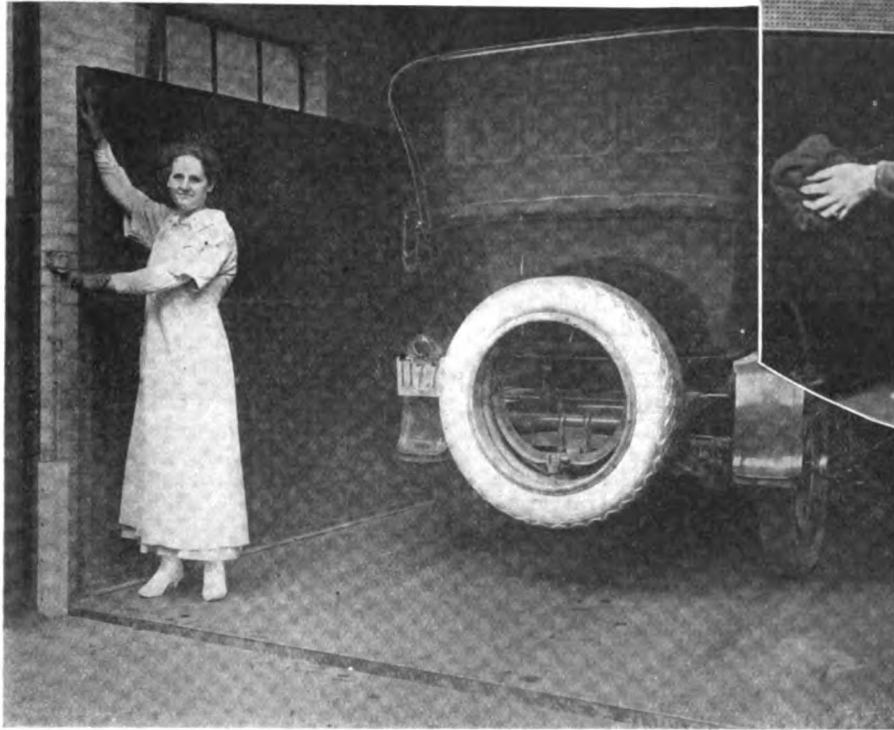
*The tool room checker. All workmen are obliged to sign for all articles taken*



*She runs the factory elevator*

# in a Big Boston Service Station

*Running the large car hoist*



*Putting the finishing touches on an enclosed car—a job in which she takes pride*



*She stands out of doors all day, grinding out gasoline, and she is just as careful of wastage as she is of the wastage in the flour box at home. Give her a chance at your own filling station*



*"Queen of the toolroom" filling an order for tools from one of the workmen. Every tool is returned to this room after the job is finished*

# She Operates a Garage

## *And Makes It Pay*

### HER BROTHERS WENT TO WAR AND SO—

**D**OFF your kelly and do a bit of homage, Mr. Accessory Man! There, that will do. This is Miss Olive MacReynolds, who is a living answer to the "well known and popular" question, What Are You Going to Do to Help Win the War?

And she is helping herself, too, as manager of the Quality Tire Shop on Lancaster Avenue, Ardmore, Pa., in the absence of Big Brother Wesley, who has enlisted in the navy, and of the junior partner, Harry J. Norton, Jr., who has been drafted and is at Camp Lee.

Has she made good? Well, there's a standing bet in the garage across the way that Miss MacReynolds could differentiate and reassemble properly the parts of a Ford, a town clock and a Farmer Boy tractor if they were all piled up in a wreck.

Once upon a time Miss MacReynolds went to a big accessory concern and asked to buy a pair of chain carbon removers, and when the clerk with the six-cylinder think-tank laughed provokingly

and told her there wasn't any such animal, she smiled indulgently and said, "Why, Bertram, you've just picked them up a couple of times while I stood here. Those are chain carbon removers. Look at 'em sharp and next time you'll know." When Miss MacReynolds calls there now Bertram sulks in the back of the spark plug emporium.

When it came time for Brother Wesley to rush off on the big job he wasn't in any panic. He remembered that sister, who then was helping to unscramble the problems in a big New York trust company, had been well grounded in the tactics and technique of motor car accessories, having studied that end in the advertising department of the Autocar Co., and with a large wholesale accessory concern, as well as having been associated with the late Telemotor Co. in Philadelphia. So he just wired:

"Sis: Come on home and be manager of the shop."

That was early last May. Since then Miss MacReynolds has been running the



MISS OLIVE MacREYNOLDS  
Who runs the Quality Tire Shop in  
Ardmore, Pa.

business with a lone assistant. Here's a full box score of her daily program:

8:30 a. m.—Arrives at office and goes over the mail.

9 to 9:30—Attends to banking.

9:30—Starts in at any job of vulcanizing on hand—at which she is an expert.  
1 to 2 p. m—Luncheon.

2 till 6—Puts on tires, pumps gas, fills tires with air and sells accessories.

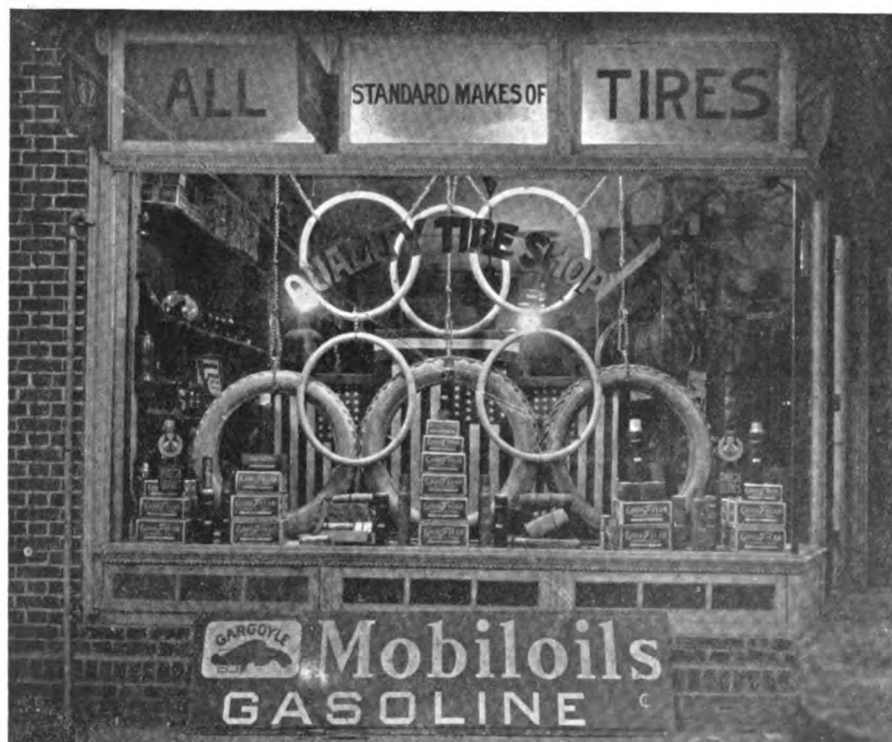
6 p. m.—Shuts up shop and goes home like a real business man.

Miss MacReynolds is adept in the mileage of tires—can tell quickly by their "symptoms" and the fabric whether they have outlived their usefulness or can take a few more spins over tack-and-glass mosaic boulevards.

#### Real Window Trimmer

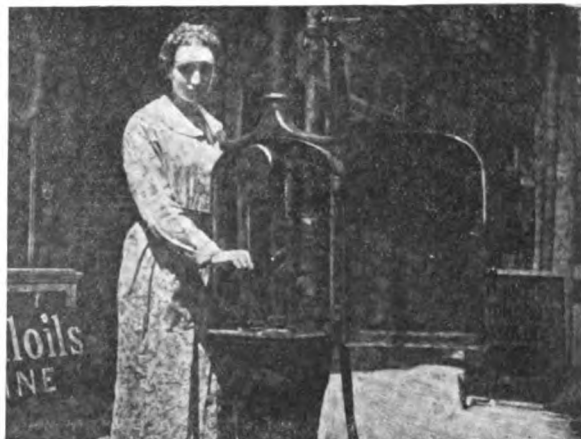
Window trimming is where Miss MacReynolds shines, too. She handles the heavy chains for displaying tires as though they were strips of baby ribbon, and the shop window has a name for good taste. She has systematized the tube department and put in her own claim check plan, so that there won't be any more mix-ups like some she first found on assuming charge of the shop, which resulted in her having to buy two extra tubes for customers. She has departmentized the stock and fixed up the shelves and projected orderliness into the place which only a woman with a gift for it can do.

To see Miss MacReynolds out in front of the shop in her "trench slip-over"—blue jeans, or something, anyhow it isn't peau de soie, or nun's veiling, or duvetyn—"gassing" the willing automobiles and inflating the tires, is a refreshing sight. Changing tires—stiff work for femininity—is accomplished by Miss MacReynolds in a jiffy.

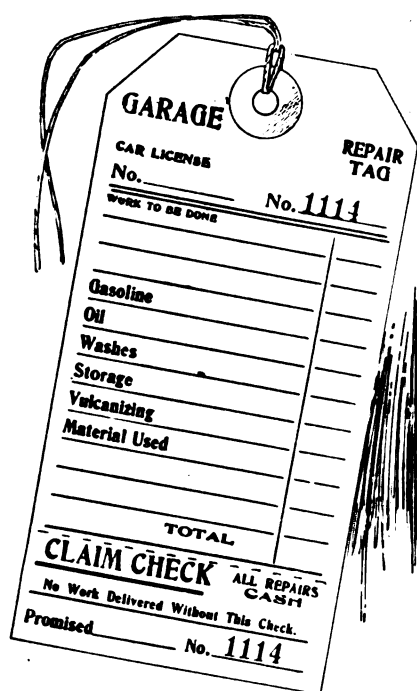


When the feminine hand gets into window trimming the house begins to cash in on its expensive street frontage





No matter whether it's supplying air or gasoline Miss MacReynolds takes right hold and never gives the customer a chance to assert that women can do some of men's work, but—



And when a car comes into the garage it is "claim checked" so the owner has no more chance of getting it without paying for it than he has with his hat in a Broadway restaurant

"I like the work," she says. That's the secret of her success—and of course a woman can't keep a secret.

#### Southwest Nash Motor Company

KENOSHA, July 27—One new distributing company was added at the annual distributors' convention of the Nash Motors Co. held at the factory recently. This brings the number of distributors representing the Nash company to a total of thirty-one. The new company is known as the Southwest Nash Motor Co. of Kansas City, branches of which will soon be established at St. Louis and Oklahoma. A Denver branch was started July 1. It is incorporated for \$100,000 and managed by R. R. Bush. The company will have charge of Nash sales in the following territory: All of the State of Oklahoma excepting a few northern

counties; all of the State of Arkansas excepting a few counties in the east bordering on the Mississippi River; entire State of Colorado; two-thirds of the State of Wyoming; all of the State of New

Mexico excepting the southwestern quarter of state; the eastern half of the State of Missouri; the southern half of the State of Illinois, and the Panhandle of Texas.

## Some Man When He Grows Up!



IF Motor World were to inaugurate a contest to determine the biggest motor vehicle mechanic in the country, Raymond, Cal., would enter Dan Steinhour. He is just as big as 6 ft. 4 in. and 310 lb. indicate. He is so strong that he can raise the front end of a Ford off the floor with one hand and place a wooden horse beneath the axle with the other at the same time. He is so powerful he can crank a two-ton truck when in gear and not only start the engine but move a 3600-lb. automobile attached to the truck by a ten-foot tow bar ahead one foot as well. And at that he is but 37 years of age.

Raymond, Cal., is a town of about 200 residents at this time. Some of the finest granite quarries in the world are in the

surrounding hills and previous to the war 1000 persons received mail there. Now these are nearly all gone and the camp houses are falling into decay. It is estimated that \$16,000,000 worth of gold has been taken from a little stream above the town and there are copper and other ores in the ground. Raymond is on the direct road to Yosemite Valley from Fresno and the difficult going makes business good for Steinhour. He charges a dollar a mile to tow a car in the hill country and gets several jobs each week. His shop is well equipped, and Dan is some mechanic, having had his first experience with gasoline motors driving a tractor when fifteen years old, back in Kansas in the same locality that produced Jess Willard.

# The Female of the Species

*ELSEWHERE in this issue are stories of women in automotive activities that have in the past been foreign to them. It is "new work." Woman is regarded as becoming "more important" in business. It is the purpose of this story to tell how she has ALWAYS been important in business and has been the cause of more successes and failures than mere man ever dreamed of. What do you think of the story?*

By RAY W. SHERMAN

"WHAT'S the matter with young Roberts?" demanded Reilly, as he scanned the sales reports of the past month.

"Not showing very well, is he?" replied Tommy Trumbull, sales manager for C. J. Reilly, Inc., which scattered many Sennetts each year in and about Callawassa.

"I should say not!" Reilly declared. "He has been slipping badly. When he started in here I thought he was a comer—and he did do mighty well. He had the makings of a corking good business man in him. There might have come a time—I could see it—when Roberts could have a mighty good job here, provided he didn't set up in business for himself. I wonder——"

## The Reason Why

"I don't wonder—I know!" interrupted Tommy. "It's his wife. He got married last fall. For a while after that he did better than ever, but then things began to go wrong and he's been slipping ever since."

"Is that so?" the dealer exclaimed.

"True as gospel!" Tommy asserted. "My wife knows his wife, and the things Mrs. Trumbull and myself would like to say to that girl would fill a book. Unless they hit it off better than they are, Robby never will be anything more than a small potato in anything."

"What's the trouble?"

"Oh, she thinks Robby ought to become a millionaire or a duke over night. She is filled with this false conception of life. She wants to have a lot of money to spend and wants to fly high right off the bat, and all the time she keeps nagging Robby to hunt for another job, to get more money, to do this and do that, without stopping to realize that if Robby is going to get anywhere he's got to work hard to make the grade—just the same as the rest of us."

"Uh huh," Reilly saw the situation. "She wants to get to the top and she isn't willing to do her share of the job. She keeps nagging a good horse because he doesn't do the impossible. She hasn't the sense that she ought to have

"Few people realize how important the woman is in the progress of business, Tommy. John H. Patterson, of the National Cash, knows, and he spent fifty

thousand dollars to bring home to the wives of his men what their daily work amounts to and how the woman can help or hinder the man.

"Life is a two-handed business. Many men don't realize what their wives mean in the success or failure of the men, but the influence is there just the same. I know one man who made a good start on a wholesale job down at the factory at Sayanna, but it meant that he had to do quite a lot of traveling. His wife kept nagging at him about a job that kept him away from home, and the result was that he begged and got a job in the office and has become a cog in a big machine. His wife can't understand yet why John doesn't get along faster. She 'knows he's smart' and believes the factory is holding his down. She——"

"That same thing happened with Robby," said Tommy. "We wanted to give him a job in the wholesale, but his wife said she couldn't stand it—so he has stuck to the retail and gets worse every day. Of course, being away is hard——"

"I know it's hard!" snapped Reilly. "Didn't I go through it? But a job's a job—and I never would have got this agency if I hadn't paid the price for it. Things aren't bought to-day for nothing. Whatever you get you pay for."

## The Other Side of It

"Why, Tommy, there was a fellow in here the other day to ask me which of two jobs he should take. He said he could move to either of two towns. The job in Kennell was the better, with wonderful possibilities. But he said it was a bum town and he wouldn't ask his wife to live there. I asked him if she wasn't willing. He said, 'Sure she is. She'd go to the end of the earth with me if I could better myself.' I told him: 'If that is true what right have you to rob her of the privilege of doing her share toward getting you the success she wants you to have?' He said he hadn't looked at it that way—and he's moved to Kennell."

"Here was a woman who was ready to do anything to help, ready to live anywhere, anxious to put up with anything, because she realized that in the life they led the man did one part and she did the other half—or more."

"I've noticed this wife of Robby's calls him on the telephone a lot. She intrudes too much into his business day. She wants him to take her to lunch, to get theater tickets for her, to do this and do that, and then she kicks because he doesn't make a bigger success of the job she is so wonderfully busting up on him."

"It may be considered selfish on the part of a man if he wants to be relieved of lots of little troubles at home, if he doesn't want to get up in the night and take care of the kid, if he hates to have to get his own breakfast or wait for dinner at night—but I think the woman who would let her husband do those things if they were reasonably avoidable is mighty short-sighted. They interfere with his work. They make him less fit the next day. And anything that detracts from his efficiency only puts ultimate success that much farther away."

## Things That Count

"The right kind of eats is mighty important—and that is why the National Cash went into this subject quite thoroughly at its now famous wives' convention a year ago. Plenty of sleep is important. Not too much phoney society stuff is a good thing—and there are small points like this without number that are most important when taken in the aggregate."

"Home happiness often increases as does the success of the man; therefore the home should revolve around the man's job. That makes the man's job the whole family's job. It isn't a case of the man only working; the whole family is working at the man's job, but doesn't always know it."

"I've known of many negative cases such as I have cited—and I've known of many others in which the man was made by the woman—even if neither realized it. Old Kipling's 'Female of the Species' is to my mind a good thought gone wrong—for I don't think that's what he meant at all. What he might better have said is that the big percentage of us go toward or from success because of reasons that we don't always recognize as the real reasons."

And just then somebody on the telephone asked in a pettish voice if Mr. Roberts was in.

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**METHODS** That Have Made Success for Car Dealers Will Do the Same for the Tractor—and the Car Dealers Know These Methods Well—How Thorpe Applied Car Sales Letters to the Tractor

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# The Farm Tractor Needs Motor Car Merchandising

**T**HE dealer who is going into the tractor business will normally have little speculation as to how he is to put the product across in his territory.

But in case he does ponder at all on the question the explanation is easy, for there is no better answer to the question of how to merchandise the tractor than to state that motor car methods are those that will bring success.

The car dealer already knows these methods. The tractor dealer who has not sold cars should study the car dealer's methods. And the maker or distributor who seeks the most efficient distribution would do well to spread his product through motor car channels in order that he may have advantage of an already existing efficient merchandising system which is more or less second nature to motor car dealers.

## Sales Fundamentals Count

Not only do sales fundamentals count, but in many cases even the machinery that has been used in car merchandising can be used with almost no change in tractor merchandising. To illustrate by a typical example:

In Champaign, Ill., J. C. Thorpe has for some years operated the Thorpe-Amerman Motor Co., handling the Nash and Marmon. He has built a successful business, employing good accounting methods and operating along up-to-date sales lines. He has used prospect files, form letters and the other machinery that is customary in car merchandising.

Not long ago he added to his line the Case tractor and Grand Detour plow, and at once employed practically the same methods that have made him successful in car selling. He uses a prospect file, form letters, newspaper ads and other similar machinery. As a starter he listed every prospect he could find in his territory and then sent out a series of letters that was designed to make a direct appeal to his former prospects.

## Campaign to Get Dealers

With the letters went pieces of literature, and at the time Letter No. 1 was sent, announcing his connection with the Case line, a newspaper ad appeared, telling the same story. The whole campaign was conducted along the long-used motor car sales lines. There was also a campaign to get dealers. There was an interval of ten days between letters—four letters in all. The last letter had to do with testimonials.

"I was in need of a final clincher to my argument," said Thorpe, and, as every man is more or less influenced by what the other fellow does, provided he has faith in the other fellow's truthfulness and sincerity, it seemed that if only I could put the matter right I could use these testimonials to good advantage.

"You know, whenever I fail to make a sale I always know that I am weak somewhere in my sales argument. Somehow I have slipped in my endeavor to make my customer see things as I see them. If he hesitates and says: 'Well, I won't buy to-day, I'll think it over,' then I know I have failed somewhere.

"So I ask: 'What's your reason for waiting?' Maybe he says: 'You probably mean all you say about your tractor, but I know that if I try to use it on my ground it'll pack it. Smith, over near me, has a tractor, and he says it packs his ground and I know it will pack mine.'

"Then I say to him: 'See here, Jones! Supposing you bought one of my tractors and found that it did pack your ground. You are a good friend of mine and want to help me along. I come to you and ask you to give me a testimonial and you, because you like me, deliberately lie and say you are pleased with your tractor, that it does not pack the ground, but gives you perfect satisfaction, and you sign your name to that. That's what you would do, wouldn't you?' 'Not by a darn sight I wouldn't,' says Jones, 'think I'd lie just because I liked you—you've got another guess coming.' 'Yet here's a fellow who did just that,' I say. 'Read that,' handing him a testimonial, 'if you wouldn't lie for me do you think he would?'

## Testimonials Are Final Clincher

"This has been my most effective use of testimonials. They are the final clincher to my argument when used that way. That's why the last letter in my sales mail campaign and the last advertisement in the series has to do with testimonials. They do the business."

The letters follow in two series, A for retail sales and B for dealers; with adaptations the idea can be applied to the business of any tractor dealer or distributor:

## Form Follow-Up Letters That Sold Tractors for Thorpe

SEE STORY ON PAGE 11

### Letter No. A-1

What plan have you pursued in the selection of machinery equipment for your farming operations? Have you been influenced by the long experience and reputation of the companies manufacturing the equipment?

Is it true that the extensive use of Deering and McCormick Harvesting machinery, Hayes corn planters, Peter Schuttler wagons, etc., is due to the apparent honest efforts that have been made by these factories to build equipment up to the high standard of excellence that will insure the continuous satisfactory use of the purchaser's investment?

It is our opinion that such an experience and reputation of farm machinery manufacturers is the owner's best guarantee of satisfaction. This fact has confronted us at every step in our twelve months' investigation of The Farm Tractor, and we have turned to the word Case as the mark of highest quality. This is the basis of our recommendation of CASE TRACTORS.

THE CASE KEROSENE TRACTOR, manufactured by the J. I. Case Threshing Machine Company, of Racine, Wisconsin, the result of twenty years of careful study, is a worthy product of this manufacturer, now in its seventy-sixth year of successful manufacturing progress. Its sturdy construction, reserve power and guarantee of long life emphasize again the ideals of Jerome I. Case, the father of this enterprise, whose first vision of business progress was based upon honest value and fair dealing.

It will be a pleasure to have you call upon us for further information or to discuss the subject with you. It is our opinion that we might spend a little time together to our mutual advantage. The selection of the right tractor is important.

### Letter No. A-2

Just what is your opinion of the tractor as an aid to comfortable and profitable farming, and of the present standing of the tractor among the many different farm implements that are now contributing to successful farming? The farm papers and trade magazines are full of tractor developments and tractor news. It looks as though the tractor had earned its right to consideration as a farm necessity.

Since writing you the other day about CASE KEROSENE TRACTORS, we have talked with a number of our farmer friends, and some points have been emphasized that we have thought to write to you about. They relate principally to the selection of the right tractor as the product of the right factory.

First—During the seventy-six years, more than three-quarters of a century, of farm implement manufacturing—the J. I. Case Threshing Machine Company has never delivered an experiment to a customer. Every machine has left the

factory with an honest and sincere belief in the hearts of its builders, of its "fitness" for the work contemplated.

Second—More than twenty years ago the CASE OIL & FUEL FARM TRACTOR was conceived at the CASE factory, and since that time there has been continuous and persistent study and investigation to the end that CASE FARM TRACTORS would merit the mark of honest value and "fitness" that has encircled the world with the CASE standard of quality.

Third—During this twenty years of study CASE engineers and special representatives have rubbed elbows with the farmer all over the land and learned his needs. The result has been that CASE TRACTORS are represented, not as the offspring of an enterprise born over night on the crest of a great demand—not a compromise of ideas gathered here and there from others' experiences—but as the crystallized effort and energy of an organization that feels the need and knows how to meet it.

These seem to us to be common sense facts. We would like the opportunity of discussing this subject with you.

Enc.—"Select the right tractor."

### Letter No. A-3

In talking over the Farm Tractor proposition with one of our Case 10-20 owners the other day, he said:

"This machine has certainly given me a new idea of the service a farmer can get with a tractor. My old machine was supposed to pull three plows. As a matter of fact it wouldn't pull two in good shape. I was told it would save money for me by using kerosene. As a matter of fact it wouldn't operate on kerosene.

"I was told it would not require expert handling. As a matter of fact, the only satisfaction I had with it was when I gave my own time to it, which I could hardly afford to do. I have just finished plowing 297 acres with my Case tractor in 22 days, working about 20 hours a day, with a boy taking the night shift. I have used 341 gal. of kerosene, 15½ gal. of motor oil, and 3 gal. of gasoline. The machine didn't stop once except when we were ready to stop, and we plowed 27 acres in one continuous run of 31 hr."

The signed letter of recommendation of this owner is in our files. He is a man of thorough integrity, just as you are, and would not sign his name to a misrepresentation.

This testimonial gives you as clear an idea of the power, flexibility and dependability of the Case Tractor as we could present.

This is the dependable and money-earning machine that we want to talk to you about using on your farm in these days when horse and man power are becoming more and more expensive and hard to secure.

Knowing that there has been difficulty in securing tractors during the past two years, we have arranged for shipments

such that we can guarantee prompt deliveries for a time. The machine may be seen NOW at our salesroom, 206 E. Main Street, Urbana, and we shall be pleased to have you call.

Enc.—"Power Farming Machinery."

### Letter No. A-4

Preceding the time our government declared war on Germany, every loyal American citizen had a feeling that our nation should be preparing for the conflict. "Preparedness" was the watchword of the times. It is the most significant word in our language when a need arises that is in any way unusual.

Have you thought how much "Farm Preparedness" means to you, whether measured in dollars of farm profit, or in terms of your duty to the country?

The armies and peoples of the world are looking to American farmers for food supplies. There is a compelling demand for greater producing acreage and a greater yield per acre. Are you prepared to do your part in this emergency?

In the absence of sufficient man and horse power, the Farm Tractor will play a most important part in "Farm Preparedness" plans.

Farm Tractors that meet the requirements will be those of sufficient reserve power and stability to meet every need of every farming operation under the most trying conditions. CASE Tractors meet these requirements.

There is a CASE Kerosene Burning Tractor for any size farm; a CASE that meets the need of every farming operation; a CASE that burns kerosene completely and efficiently.

J. I. Case never delivered an experiment to a customer.

You can get delivery NOW.

### Letter No. A-5

It is always interesting to know what other men are doing with machinery when we are thinking of investing in similar equipment.

As a general proposition, we don't go much on testimonial letters, but as a matter of fact, men of any integrity don't sign letters that lie, or misrepresent facts. You wouldn't do it, and neither would we.

Here is part of a letter from one of our CASE Tractor owners that we believe will interest you. We have the letter here at the office, and will be glad to show it to you. It is dated March 13, 1918.

"I purchased my Case 10-20 Tractor in July, 1916, with a three bottom plow. I have plowed about 240 acres and disked it all in, and have had very little trouble or expense. So far, repairs have cost me \$10. My boy operated the tractor and last fall he plowed 70 acres of stubble in seven days. I am well pleased with my CASE ———."

Note the repair cost—about two cents per acre per year.

Another owner, farming 200 acres,



writes that his tractor was so satisfactory last year that he has dispensed with all of his horses but one team and figures he will save money by hiring teams when necessary to take care of short periods of corn cultivation and grain haulage.

A CASE Farm Tractor will prove a Time Saving, Labor Saving, Money Making investment for you. Come in and see us about it.

J. I. Case never delivered an experiment to a customer.

### Letter Following Call

In going over the reports of our sales department, I have been very much pleased with your interest in farm tractors. I want to thank you for the consideration given our salesman, Mr. Breckenridge.

Farming interests are feeling the influence of war conditions to the greatest degree. There is a compelling demand from our own country as well as our allies for increased acreage and greater yields per acre. In the face of this demand is the continually decreasing supply of horse and man power on the farms.

These conditions emphasize more and more the need of the farm tractors and other power farming machinery.

The unfortunate thing about it all is that the factories are unable to keep up with the increasing demand, with the result that acres remain undeveloped, needed bushels of grain are not grown, the world's armies of soldiers and workers are unfed, and profits in farming are not realized.

Last year the demand for tractors was fifty per cent greater than the supply. The same condition will exist this year in spite of the efforts of the factories to increase production. This should present a real lesson in "Farm Preparedness."

If you plan to use a tractor for harvest or fall work, place your order NOW—don't delay. Naturally we want you to buy a CASE TRACTOR—it is our business to sell them—but if you prefer another make of machine, we still urge you to BUY NOW. No one can guarantee deliveries on later orders.

If you are interested, we will be very glad to go into the subject in greater detail with you. The subject is of greatest importance at this time, and we trust you will think of it seriously.

Sep. Inc.—"A Plowing Outfit for Any Size Farm."

### Letter No. B-1

If you were selecting a tractor account for your business, what are the points that you would use to measure the value of the several propositions under consideration? What do you think of the following points, outlining the specifications of a desirable Farm Tractor account?

1—A factory of recognized proven ability to finance and control the highest attainable per cent of the processes entering into the construction and marketing of its product.

2—A factory of such experience and financial stability that it may be expected

to withstand any disturbances in national economic and financial affairs.

3—A factory with the disposition as well as the ability to render the closest co-operation in all its relations with the dealer.

4—A machine as nearly standardized as present practice in the industry makes possible, with units of proven merit devoid of faddish or marked experimental features.

5—Of sufficient power and flexibility to do the work required of it without the appearance of undue stress or labor.

6—Of such pronounced accessibility of mechanical detail as to guarantee a minimum loss of time and money for necessary repairs, replacements or adjustments.

7—Of such ease of control and operation as to make the employment of expert labor unnecessary.

8—Of proven economy of operation and maintenance.

9—Sold at a price of special attractiveness consistent with apparent value.

10—Of particular "fitness" for the character of farms and farming within the territory of distribution.

It was because the J. I. Case Threshing Machine Company and its tractor measured up so closely to these standards that we chose the CASE for our tractor department. We offer you the opportunity of participating in the profit and satisfaction that is guaranteed to CASE dealers.

May we have the opportunity of discussing this attractive proposition with you?

Enc. "Select the Right Tractor."

### Letter No. B-2

Are the farmers in your community influenced by the reputation of the factory and its product when they purchase farm machinery?

Do the names Deering, McCormick, Peter Scheuttler, John Deere, Hayes and others stand for quality and permanent satisfaction? If you answer "yes" to these questions you will readily understand what CASE stands for in the Farm Tractor Industry. CASE is the standard of quality in tractors.

During more than three-quarters of a century of farm implement manufacturing the J. I. Case Threshing Machine Company has never delivered an experiment to a customer.

CASE Kerosene Burning Tractors are not experimental, but have proven their "fitness" for all farming operations where tractor power can be used.

CASE Farm Tractors burn kerosene continuously and economically with a real saving of money; have a great reserve power; do more work; use less fuel, require less repairs, and last longer.

This is the J. I. CASE IDEA of Tractors and Tractor Service. It is the basis of a real profit earning, pleasure giving business.

There is a place for you in the dealer organization that is merchandising the CASE IDEA at a profit. If you are interested in the details of our proposition we will appreciate a request for further information. Prices are right; your territory is now open, and the discounts are attractive.

Enc. "Power Farming Machinery."

**FARMERS, ATTENTION!**  
**WOULD YOU SIGN A LETTER STATING A LIE?**  
Of course not.  
**NEITHER WOULD THESE OWNERS OF CASE KEROSENE-BURNING TRACTORS**  
**READ THESE STATEMENTS**  
**ABOUT SEEDING**

"I have pulled one eleven-foot drill, one twenty-foot drag ahead of the drill, and one twenty-five-foot drag behind, all at once, that is, nearly dragging the ground four times and drilling twenty-eight acres a day, in one operation with my CASE 10-20."

#### ABOUT PACKING THE GROUND

"In one field we disked the stalks, then plowed and disked the ground with the tractor. Although for the most part the ground was too wet to plow, I cannot find that the tractor caused any injurious effect from packing."

#### ABOUT THE COST OF PLOWING

"We pulled three plows six to eight inches deep in the ground with our CASE 10-20 and did it nicely. We plowed about 200 acres of land, the cost being as follows:

"1 1/4 to 1 1/2 gal. fuel to the acre .....	\$51.00
"1/2 to 3/4 gal. motor oil per day .....	10.00
"Wages, for one man 25 days .....	50.00
"Miscellaneous expense .....	6.00

"Total .....

"Cost per acre ..... 58 1/2

"We do not know where we could buy a tractor that will do better than this."

Copies of these letters and dozens of others are on file in our office. You can see them.

**THEY TELL THE TRUTH ABOUT CASE FARM TRACTORS.**  
Immediate deliveries NOW on a limited number of orders.

**THORPE AMERMAN MOTOR COMPANY**  
206 East Main Street. Urbana, Ill.

In addition to the form letters Thorpe used newspaper ads. This is the ad that appeared at the same time Letter No. A-1 was mailed

## *New England*

# Breaks All Records for N.A.D.A.

## Rushes Membership to 445 in 2 Weeks

## JOHNNY JOHNSON'S COMMITTEE DOES FAST WORK

### Newark and Buffalo Add Their Support

**T**HE fastest piece of organization work the trade has seen was wound up last Friday in Boston.

At the termination of a hot and fast two weeks' campaign the N. A. D. A. membership had been raised from 85 to 445 for New England. The meeting at which the result was announced was held Friday noon, July 26, in the Brunswick Hotel; 300 dealers from New England were there. When the result was announced by Chairman John H. Johnson there was a loud cheer.

When President F. W. A. Vesper of the National Automobile Dealers' Association rose to tell his story of what the dealers have done and must do there were more cheers. And there were still more cheers when Executive Secretary E. E. Peake told of what the association plans to do.

The cheers were not perfunctory hand-claps. Everybody got up and yelled. Furthermore, the 300 is the actual number of tickets sold.

The New England membership committee was named only two weeks before the scheduled Boston meeting. At that late date John H. Johnson, the Buick dealer—whom everyone calls "Johnny"—was named chairman, and told to select his own committee. He is a director of the N. A. D. A. and vice-president of the Boston Association.

As his committee he chose: F. A. Ordway, Hudson; Joseph S. Donovan, Studebaker; A. L. Danforth, Cadillac; R. B. Nettleton, Chandler; L. B. Sanders, Oakland; F. W. Stockbridge, Winton; J. James McGregor, Oldsmobile.

Application blanks and literature from the St. Louis headquarters of the association were slow in arriving, so an order was rushed through a local printer.

An office was hired near Motor Row in a hotel. A secretary was engaged. Clerical help was hired. Lists of all the dealers and garagemen in New England were secured and card files started. There are 900 dealers and 900 garagemen, but the names of all were used so there might be no possibility of any man being missed.

Form letters were rushed out to the list about three days apart, with return postal cards. One of the final cards read as follows: "Why haven't you sent in your application? When will you mail it?" There was this kind of snap all the way through.

Also, letters were prepared in a series of three and turned over to Boston distributors with instructions to mail No. 1 on a certain date, No. 2 on a certain date and No. 3 the minute the order was given. Each distributor thus circularized his own dealers to back up the membership committee.

Then the committee planned meetings. Ordway used to live in Maine, so he took charge of that section. Other dealers took other cities.

The committee met every day from 9 a. m. to 3 p. m.

Late in the afternoon the various mem-

bers made dashes out to various New England cities, down to the south shore, up into the mountains and everywhere there was possibility of reaching a bunch of dealers. The speeches were short, fast and to the point. Sometimes the committeemen would get into a town at 7.30 and be out and homeward bound by 9 o'clock.

The applications began to pour in. The more they poured the harder the committee worked. Before the campaign started there had been 50 N. A. D. A. members in Boston and 35 outside. This total of 85 started for the 500 mark. By the time of the meeting it was 445 and more coming in. The committee is going to keep right on working.

When the meeting of last Friday was first called 200 reservations were made. This was later increased to 250, and by the hour set 300 tickets had been sold.

Johnson presided. After a few remarks he handed to Executive Secretary Peake a big bundle, tied with a pink ribbon, containing the checks and applications of the 360 new members.

After the addresses by Vesper and Peake various New England dealers spoke, and from the opinions they expressed of the N. A. D. A. and its work thus far New England will have far more than 500 members before the campaign really ends.

This is 55 per cent of all the eligibles. If the whole United States should do as well the N. A. D. A. would have about 20,000 members in a few weeks instead of the 5000 that is planned by September.

Following the Friday meeting quite a few dealers who had not yet joined walked up and handed in their applications. Reports were received that more were on the way from cities, villages and hamlets, from all sections except western Connecticut, which is considered as in New York City territory.

### Newark Joining N. A. D. A.

Last week Wednesday evening, July 24, President Vesper and Executive Secretary Peake appeared before a meeting of the New Jersey Automobile Trade Association in the Robert Treat Hotel, Newark.

Following the meeting the association instructed the trustees to work out a plan whereby all dealer members become members of the N. A. D. A. in a body. The move was made in this way because the dues of the Newark association are only \$15—the same as the first year in the N. A. D. A.—and the treasury would be injured by the sudden withdrawal of the necessary funds.

### Buffalo Enthusiasts Join

Last week Tuesday evening, July 23, the Buffalo dealers heard the story of the N. A. D. A. and enlisted 85 new members—40 from Buffalo and 45 from out of town.

### Big Meeting in Chicago

The present week's big N. A. D. A. news is in Chicago, where a meeting of the dealers from that territory is scheduled for Tuesday evening. There is considerable speculation as to whether Chicago will beat the New England record of 360 new members.

### Members Coming In

ST. LOUIS, July 29—The number of new N. A. D. A. members was not announced this week, but it was given out that the Minneapolis Automobile Trade Association has reported 181 members as the result of a campaign following the meeting, at which President Vesper spoke in Minneapolis two weeks ago. This meeting was attended by more than 1100 dealers from Northwestern states. Besides the Minneapolis association report a number of memberships were received direct from dealers.

Alabama and Georgia sent their first substantial report of members, and scattering returns were received during the week from Colorado, Connecticut, North Carolina, Pennsylvania and New York. The best news, perhaps, was the memberships from Washington, D. C., which has been somewhat slow and has been watched closely by leaders in the War Service movement.

The 100 per cent reports during the week came from Jackson, Miss.; Decatur, Ill.; New Orleans, Denver, Pueblo and the Tri-Cities (Davenport, Ia., and Rock Island and Moline, Ill.).

During the week a partial check of memberships forwarded by individual dealers not officially connected with the association was made. This check developed that J. Frank Martin of Kansas City is far in the lead. The number of memberships sent in by Martin will be announced as soon as the check is verified, but in the meantime there is an opportunity for an ambitious dealer to head him off.

President Vesper and Executive Sec-

retary Peake continued their eastern trip, and reports sent back were most encouraging.

### Oil Companies Hold Out

ST. LOUIS, July 29—Instead of oil on the troubled waters, oil has become the troublesome element in the War Service regulations promoted by the War Service Committee of the National Automobile Dealers' Association.

From Pittsburgh and Chicago and several smaller cities come reports to Assistant Secretary Holke, of the N. A. D. A., that the oil companies controlling

filling stations are not yet ready to observe the closing hours, and in Chicago it required police action to close the tire and accessory departments of establishments that sell oil and gas.

The oil companies assert that they are under direction of the Petroleum Committee and owe no recognition to the automobile committee. Holke took the problem up with M. L. Requa, director of the Oil Division of the Fuel Bureau, and with A. C. Bedford, chairman of the Petroleum Board, informing them that the action of the oil companies threatened the solidarity of the automobile con-

(Continued on page 38)

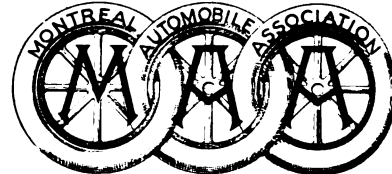
## The Man Who Did It



JOHNNY JOHNSON

*His real name is John H., but as long as he was chairman of the New England N. A. D. A. membership committee he was plain Johnny. He headed a committee that achieved a great piece of organization work, and the men who helped him do it were: F. A. Ordway, Joseph S. Donovan, A. L. Danforth, R. B. Nettleton, L. B. Sanders, F. W. Stockbridge and J. James MacGregor*

# By These Signs Shall Ye Know Them



## *Emblems serve to build successful trade associations— Reasons why—and How*

**S**UCCESS for many enterprises and individuals has been due to advertising, even though the advertising may have been so camouflaged that it was not recognizable.

And probably few people appreciate how extensively advertising plays a part in the success of organizations, especially trade associations. The most conspicuous successes in organization lines in the automotive trade are those which have best understood the value of advertising.

Advertising brings an association before the eyes of the public and prospective members. It makes the merits of the movement known. It convinces folks that the organization is alive—and once people are so convinced it generally isn't difficult for any organization to keep up with its advertising.

One of the important factors in association advertising is the association emblem, which can be good or bad in its effects. If the emblem is persistently used in places of business, in members' advertising, and on stationery, it hooks the organization up in the trade and public mind with the things its members stand for. Wherefore, if the members are a bad lot the emblem gets a bad name. But if the members are reputable, the emblem acquires high standing, just the same as does the flag of a nation or a trade-mark.

"There can be no question regarding the value of an emblem and its use," states President F. W. A. Vesper of the National Automobile Dealers' Association,



The certificate of the Chicago association is typical of those used by many associations for hanging in the office or salesroom of the member. Those shown above in a row are emblems that are used on letterheads, literature, in ads, and elsewhere. The names appear on all except that of the National Automobile Dealers Association, the third from the left

tion, "because everybody who belongs to an organization likes to have something to notify the public, and especially at his place of business."

"I am of the firm belief that it pays to advertise," says Commissioner William M. Webster of the National Association of Automobile Accessory Jobbers, which is one of the best advertisers in the business, and also one of the most successful organizations in any trade, "and my experience has been that one of the best methods of advertising is to impress the public constantly—and I know of no better way than in an emblematic fashion or on stationery, signs or otherwise, which we have indulged in liberally, as the stationery of a great many members will indicate."

This organization issues as a membership certificate a "crystoglas" round sign in red, green and gold, 10 inches in diameter, which is very attractive, and is suit-

able for hanging in a member's office. Extra emblems are furnished at \$1.50 each.

"I believe," continues Commissioner Webster, "that the emblem is one of the helpful means of building up an organization. As to whether it pays, I believe the growth of our association is one of the best answers. I think our emblematic campaign has been a very helpful factor."

In Chicago, the dealers are closely knit together in the Chicago Automobile Trade Association, and use as an emblem a membership certificate, similar to that used by many other dealer associations. The association does

not possess an emblem proper.

The Chicago association had an emblem up to Jan. 1, 1917, a brass plate 6 x 8 in., weighing about a pound, and hung by a chain. Emblazoned thereon was a roadster—originated in 1912—which caused the brass emblem to become obsolete. Therefore, when the price of brass went up, and the up-to-dateness of the emblem went down, they were called in a year and a half ago and junked.

Since then the association has used a neat certificate, illustrated herewith. The certificate and frame are supplied by the association when the member pays his annual dues, and inasmuch as each certificate bears the year in big figures, members are not proud to have last year's emblem hanging around the office or salesroom.

"We believe our members," says As-  
(Continued on page 48)



*The Other Side of the*

# Dealer-Manufacturer Question

## Some of the Things Dealers Do and Don't Do to Get Maximum Co-operation

**B**ETTER co-operation between dealer and manufacturer is needed. There are many opportunities which the manufacturer offers to the dealer which are not fully grasped and, on the other hand, the dealer is often hampered in many ways by inattention on the part of the manufacturers.

The dealer should aim to cash in fully on the money the manufacturer spends for advertising. Often this is not done. If the salesman does not familiarize himself with each factory ad as it appears and does not try to get additional information so that he can supplement the arguments in the ad, then he is neglecting an opportunity.

Some man reads the ad and is impressed with the facts in it. He is so impressed that he decides to make a call at the salesroom. No mention is made by the salesman of the all important statements contained in the ad; therefore the customer's original impression begins to weaken. If the salesman does not touch on it, it does not seem to be quite as important as it looked when he read it. Or he may ask for further information on the subject that is contained in the advertisement and the salesman may dismiss the question in a few words or may not be able to supply the additional information he desires.

Recently a manufacturer advertised that his product was 99 per cent efficient, and went on to give in great detail how he had arrived at this conclusion. If a salesman used the arguments contained therein in talking to a prospect who came while the ad was still current he would make a strong case. He would make a still stronger case if he could and would supply additional information.

Some time ago another concern advertised its product as the dominant motor car value. It was a sweeping claim. To the prospect who wanted to be shown it might require considerable proof, and the salesman should have this proof.

A concern advertised that the features of its product were comfort and beauty. The salesman who simply repeats this sentence is not doing very much toward making a sale. He should be able to enlarge on these two points. He should be able to give a dozen reasons why the car should be classed as a luxury car.

Another concern advertised that its car was away from the commonplace. This was the main thought in the ad,

and the reasons for calling it such had been determined after deep thought and careful study. They were not the usual arguments that every salesman has on the tip of his tongue. If the ad impresses the prospect so that he is moved to call at the showroom to see the car, it is desirable to continue the sales talk along these lines and to develop the good impression he already has, but if the salesman begins on a new angle and completely ignores the effect of the ad he is running the risk of losing the sale.

The dealer is offered a big opportunity in the many sales promotion plans which different companies have developed, and yet some dealers are slow to take advantage of them. In the first place, if the plan is considered at all, it should be adopted in its entirety or else left alone. It is poor policy to try to economize by using part of it. The sales promotion plan should not be looked upon as a method of getting dealers to help out on factory advertising; in fact, it is just the other way. The dealer gets practically all the benefit and the factory shoulders all, or part, of the expense.

These plans have usually been worked out by experts, and it has been found that big results can be obtained from them.

Catalogs, circular letters and other advertising matter are produced in large quantities by many factories and are extensively used by dealers, yet it is not always that full benefit is obtained from this matter. Catalogs and other literature are often thrown around and get dusty and dirty. Yet the factory probably went to a great deal of pains and expense in making this literature the best of its kind.

Expensive catalogs are some times given to people injudiciously. Every man who comes in to ask about the car does not require an expensive catalog. It may be obvious in talking to him that he is not a prospect and will never be one, and in this case, or in cases somewhat similar to this, a small folder might be sufficient.

A certain company prepared a special cut-out chassis together with several sets of display cards and planned to send this exhibit around to all the state fairs with a lecturer. The whole outfit was free to the dealer except that he was asked to pay transportation on the ex-

hibit from the last town to his town. The company stood all other expenses, even the salary of the lecturer, and yet great difficulty was experienced getting the dealers to stand this small expense.

Many dealers complain about difficulty in handling service work, but at the same time some of them will not take advantage of the opportunity the factory offers them in the way of service schools for instructing their mechanics or in service bulletins which are mailed free. It has been the experience of factory service managers that frequently they will receive requests for information on certain matters which have been fully explained and illustrated much better than ever could be done in a letter in recent service bulletins. One of the greatest problems the factory service department has is to get the dealers to read the information which they issue on the subject of service.

Some times the trouble is due to carelessness in filing these bulletins. Then again it seems likely that they are thrown away without their value being appreciated.

The difficulty is that the average dealer receives so much advertising literature in the mail that some really worth-while things are liable to go into the waste basket. The proper method is carefully to sort and read all mail, discarding what is not required.

Some manufacturers get out weekly or monthly booklets to aid in making sales and, as in the case of the service bulletins, it is often difficult to get the dealers to read them. When a bulletin is received it is a good plan for the dealer to dictate a short memorandum to all the members of his sales staff, calling attention to features in the bulletin which should be read. Likewise, when a service bulletin is received, the dealer should dictate a memorandum stating what is in this bulletin and send it to the men who should have this information.

It is the custom for factories to forward an inquiry for catalogs or information about the car to the dealer in whose territory the inquiry was made. Yet, for some unexplained reason, these inquiries are often left unheeded and no attempt is made to sell the man a car. Undoubtedly one of the reasons is that not sufficient care is exercised in opening and reading the mail.

# Motor World Drive-Away Bureau



## Women Driving Cars at Buick Factory

**FLINT, MICH., July 27**—The Buick Motor Co. is using a group of women to drive cars from the assembling plant to the loading platform and the company states that the plan is working out excellently. Fourteen women are being used for this purpose and their duties are confined merely to the driving of cars. Besides the driving from the assembling plant the women drive the cars also from the warehouse to the company's garage to be delivered to dealers who come to drive cars away. They are very well satisfied with this work and are performing their duties as well as the men they superseded, according to an official of the company.

### Route from Detroit to Pittsburgh

**DETROIT, July 27**—H. J. Clark of the Pittsburgh-Paige Co., distributor of Paige cars in Pittsburgh advises all who can to partipate in drive-aways not only from a patriotic standpoint in relieving freight equipment for more urgent government needs but because of the good condition of roads at this time of the year and the great pleasure afforded in making the trips.

Clark drives on an average about thirty-five to forty cars a month from the Paige plant to Pittsburgh. At one time in the spring he guided a fleet of forty-six cars to the east.

It is his claim that it is cheaper to drive cars from the factory than to have them shipped. He frequently ships his cars to Cleveland by water and drives to Pittsburgh from there. The cost is close to \$15. This added to the charges for stateroom and fare makes a total of approximately \$23.

The cost of driving from Cleveland is

figured at \$10, according to Clark. This makes a total cost of \$33 for driving a car from Detroit to Pittsburgh. Clark has paid \$84.84 for shipping three cars recently by freight. Although it is slightly less in figures, the cost is increased considerably when unloading cannot be accomplished as soon as the shipment arrives. A demurrage charge of \$15 is frequently suffered by the distributor because of his inability to unload in time.

Where boat shipments are made distributors must not fail to drain the tanks of their cars almost dry of gasoline. Just allow sufficient supply when starting out to reach the boat as no gasoline is permitted to be carried on the boat. All tanks are always drained before loading, therefore must be again replenished when leaving the boat. It is to the dealer's advantage to bear this in mind when making drive-aways.

In driving from Detroit to Cleveland, Clark suggests that the route by way of Cedar Point be taken as this he claims to

be abounding in beauty. With the exception of a detour north of Monroe and another between Toledo and Cleveland the roads are in very good condition and one should have little trouble. All roads along the Pittsburgh route are clearly marked. It is 55 miles from Detroit to Cleveland.

This can be made in 3 hr. and the trip from Cleveland to Pittsburgh can be completed in 7 or 8 hr. averaging 20 to 25 m.p.h. In going through Ohio, drivers must observe the state laws as they are strictly enforced in this state. A speed of 24 m.p.h. is permitted on the highways and in the towns a speed of 15 m.p.h. is allowed.

The route recommended by Clark follows: leave Cleveland via Monroe Avenue till you reach New Hudson, thence to Bedford, Stowes Corners, Kent and Ravenna. Here a choice of three routes is offered to Newton Falls, to Salem, or to Warren and Niles. By way of the latter town the driver is given an opportunity to

see many historic places. Reaching Youngstown from any one of these towns, the route passes through Coland, Petersburg, New Gallilee. At this point many drivers go toward Darlington. This is the route most of the trucks take, but Clark recommends that you continue to Coppel and Beaver Falls, reaching Pittsburgh next.

#### The Drive-Away From Nashville West

NASHVILLE, TENN., July 27—The summer drive-away route from Nashville to Memphis and the West crossing the Harahan Bridge across the Mississippi River at Memphis is as follows: 0.0 Nashville, 21.0 Ashland City, 27.5 Padue, 43.6 Charlotte, 52.3 Dickson, 70.3 McEwen, 81.2 Waverly, 98.4 Trotter's Landing, 106.8 Camden, 118.1 Hollow Rock, 127.5 Huntingdon, 166.8 Jackson, 176.7 Huntersville, 193.6 Brownsville, 216.5 Mason, 225.8 Braden, 246.0 Brunswick, 259.3 Raleigh, 269.9 Memphis.

#### Drive-Away to East Tennessee

NASHVILLE, TENN., July 27—A picturesque route to East Tennessee and the East past several watering places is as follows: 0.0 Nashville, 4.8 Glenclyff, 15.6 Lavergne, 31.5 Murfreesboro, 44.1 Readyville, 46.9 Culpepper, 51.0 Woodbury, 63.1 Centertown, 72.4 McMinnville, 82.5 Pine Bluff, 90.4 Quebeck, 94.8 Doyle Station, 101.9 Sparta, 119.7 Pleasant Hill, 132.9 Crossville, 144.3 Crab Orchard, 162.9 Rockwood, 175.6 Kingston, 197.5 Lenoir City, 223.9 Knoxville.

#### Seitz Drives Trucks

BALTIMORE, July 27—Vernon H. Seitz, road service manager of the Seitz Auto Co., distributor for Velie, Ranier and Service trucks, is shown standing beside a 2-ton Service that he drove from Wabash, a little over 800 miles, to this city loaded with 5800 lbs. of parts, in

one hour less than 3 days, the best time ever made for the distance here. Besides making time the company saved freight and express charges on the parts, some of which were badly needed. The firm has recently enlarged its parts' department and on every drive-away parts are being carried by the trucks. Seitz said it is impossible to estimate the saving in time and money and convenience through the bringing of the parts by the trucks.

#### Buffalo to Philadelphia

PHILADELPHIA, July 25—Drive-away managers coming from Buffalo, N. Y., report that of the various ways to come the 425 miles, the best and most economical route from the standpoint of saving gasoline is to take the road to Elmira, N. Y., to Williamsport, following the Susquehanna River to Harrisburg and then on to Philadelphia. This is the most level road. Other ways are as follows: Buffalo to Jamestown, to Warren, to Lewiston, to Harrisburg, to Philadelphia, and Buffalo to Elmira, to Towanda, to Scranton, through the Pocono Mountains and along the Delaware River to Easton and to Doylestown and thence to Philadelphia.

#### Denver for War Conservation

DENVER, July 27—The Rocky Mountain Auto Trades Association has secured 100 per cent co-operation from the dealers in Denver on the War Service Recommendations of the National Automobile Dealers' Association. The plan has been worked out in an original manner. The advertising of the dealers states that:

1. Free Labor—The dealer will refund to each retail purchaser of a motor vehicle all money received by him from such purchaser in payment for the labor of installing parts replaced by the manufacturer within 90 days from date of delivery.

2. Adjustments—Minor repairs, adjustments and service such as adjusting carbureter, adjusting brakes, taking out squeaks and rattles, work on battery or electrical system, cleaning spark plugs, inflating or changing tires, aligning wheels, etc., etc., and all other work not provided for in paragraph 1, shall be charged for at the dealer's regular rates, with a minimum charge therefor of 25 cents.

3. Service—All so-called "free service" shall be discontinued forthwith, and no coupon books given free or sold at a discount shall be issued, nor recognized, nor coupons therefrom accepted by dealers in lieu of cash, nor shall any other plan designed to result in free labor, service, adjustments or inspection be adopted or practised. The provisions of paragraph No. 3 herein shall be held to govern in every instance that is not covered by paragraph 1.

Appended to the advertisement are the pen and ink signatures of all the dealers.

#### Fordson Distributors Meet

COLUMBUS, O., July 27—The Bryant Tractor Co., distributor for the Fordson tractor, held a sales convention at Columbus last week, which was attended by about 150 tractor dealers throughout the Buckeye State. It was brought out at the conference that there are approximately 94,000 100-acre farms in Ohio and owners of these farms are all excellent prospects for the sale of farm tractors.

Owners of farms of that size can purchase a tractor with the absolute knowledge that it will be a profitable investment. Steps were taken to start distribution of the coming year's allotment of tractors which will be something over 1000. Following the conference the sales agents were entertained at the Elks Club with a dinner and cabaret.



Here is Vernon H. Seitz standing in front of the Service truck he drove 800 miles in 3 days

The editor of this department is glad to answer questions. In sending queries, always include copies of contracts, notes, etc., to which you refer.

# THE LAW

By George F. Kaiser

As It Applies to  
Dealers  
Repairmen  
Garagemen

## Selling a Business

**H**OW far a business man may go in endeavoring to keep a person who sells out his business from re-engaging in competition with him is a question that is always of interest to business men whether they are engaged in the automobile trade or some other. A recent case decided in New Jersey on this point is interesting.

It was held that where the proprietor of a repairing business bought out a competitor under a contract whereby the latter was not to re-engage in that business in the same city for five years, he might restrain the man who sold the business to him from going back into that line any time within the specified five years. The court said in reaching this conclusion:

Agreements in partial restraint of trade ancillary to the sale of a business appear to be sanctioned primarily because of the recognized value of what is known as the goodwill of a business. It is held to be alike to the interest of the public and the owner of a business that the owner should be privileged to sell that valuable asset and protect the purchaser in its acquisition, providing the restraint be no more extensive than is reasonably required for that purpose, and be not otherwise injurious to the public interest by reason of any peculiar circumstances of the case.

In such transactions the public interests are deemed fostered rather than injured, since the seller has been enabled to reap the fruits of his industry, and the business is continued in the hands of a new purchaser; the business with its new proprietor takes the place of the old; the commodities of the trade are as open to the public as they were before, and the same employment is furnished to others as before.

The distinction between contracts of that nature and those in which a trade competitor is hired to discontinue business is obvious. Contracts of the latter nature have been as a rule condemned, although in some cases sustained where real public interests have been ascertained to be unaffected.

## Overdraft Law in New York

**T**HE New York State Legislature has just passed a new law with regard to the giving of fraudulent checks which is to become effective Sept. 1 of this year. The new law provides:

"Any person who, with intent to de-

fraud, shall make or draw or utter or deliver any check, draft or order for the payment of money upon any bank or other depository, knowing at the time of such making, drawing, uttering or delivering that the maker or drawer has not sufficient funds in or credit with such bank or other depository for the payment of such check, although no express representation is made in reference thereto, shall be guilty of attempted larceny, and if money or property is obtained from another thereby is guilty of larceny and punishable accordingly.

"In any prosecution under this section as against the maker or drawer thereof, the making, drawing, uttering or delivering of a check, draft or order, payment of which is refused by the drawee because of lack of funds or credit, shall be prima facie evidence of intent to defraud and of knowledge of insufficient funds in or credit with such bank or other depository, unless such maker or drawee shall have paid the drawee thereof the amount due thereon, together with interest and protest fees, within 10 days after receiving notice that such check, draft or order has not been paid by the drawee.

"The word 'credit' as used herein shall be construed to mean an arrangement or understanding with the bank or depository for the payment of such check, draft or order."

This new law is a good thing. No longer will the person who has innocently accepted a bad check have the burden of proving that the maker knew he did not have sufficient funds to meet it.

## Tire Franchise Question

**EDITOR MOTOR WORLD:**—Here is something we cannot understand. In March we had a franchise for the sale of a certain make of automobile tires and tubes for the town of —, N. C. We pushed the sales of these goods for all we could, and sold a great many casings and tubes. We complied with the franchise to the letter; discounted our bills; kept from twenty to thirty casings in stock; cut out the sale of other tires.

All at once, after we furnished the tire company with list of our customers, asking them to send each party a circular and other ad matter, which the company did, a salesman came around and placed another franchise with a grocery merchant without mentioning the matter to us.

We have written the company for explanation, but get no reply. This gro-

cery man advised us not to sell any more tires. What can be done with the stock we have on hand? It is all paid for except a bill which comes due Aug. 10. Would you ship these tires back for credit, or sell them after the other fellow advises us not?

We are a licensed garage, while the grocery man is not licensed to sell automobile supplies. Our franchise has not been canceled, as it will not expire until next March. Please advise us on this matter.

— GARAGE,

—, N. C.

**Answer.**—I wonder if this is the same company that Mr. Fiske complained of in the July 17 issue of *MOTOR WORLD*? Your experience is a great deal like the one he described. The chances are that if you started to go after this concern you would find it hardly worth while, as no reputable concern could afford to do business in this way. If I were you I would hesitate to send those tires back to the company, as it is, of course, possible that you might not get the money for them.

Under the circumstances, I see no reason why you should not sell what you have in stock. If you wish to be absolutely safe, take all of your papers to your local attorney and let him look them over for you.

## When Parts Are Short

It was decided in a recent case that where a car owner shows that an automobile was in good condition, and that all its parts and tools were there when it was delivered to a warehouse man, and that many of them were missing when it was taken out of storage, the burden is on a warehouse man to show that he was not negligent.

A car owner stored his automobile, and on receiving it from the warehouse found that parts and tools were missing, that certain parts were broken, and that the car would not run.

The warehouse man testified that he knew nothing about the storage of the car until after it had been in his place several days, that he had never personally examined it, that he had removed no articles from the car, and that the warehouse had been broken into.

The court held that the "fact that the windshield was broken, that a good tire was taken off and an old worn tire substituted, and that the machine would not run," made the warehouse man responsible, as he could not show that he was not negligent.



# SCIENTIFIC CONSTRUCTION

GARAGE

SHOWROOMS

REPAIRSHOPS

We shall be glad to draw a plan for you or give you any other aid in your building, free of charge. But be sure to send full details, including a sketch of the plot, showing position of streets

## Wants Complete Plant

Editor Motor World: We have sketch, for which we wish to herewith express our thanks.

It is very evident though that you have misconstrued our meaning, for you have given us a very complete outline for automobile garage and showroom, but what we wanted was outline showing best location of different compartments for a first class custom shop, including sand blast, paint and trimming department and varnish room and dry kiln.

If you have any suggestions to offer along this line we would greatly appreciate hearing from you.

The sketch you submitted of showroom, garage, etc., proved to be of considerable benefit to us in designing a place for our Raleigh and Charlotte branches, so we tell you this to show that your efforts along this line have not been in vain.—Carolina Cadillac Co., by C. E. Enfield, Winston-Salem, N. C.

We are very sorry for misunderstanding your requirements regarding the building you are contemplating.

Herewith is a plan designed according to your request, but we are not certain it will suit you since we had to guess at the size of the different rooms in your painting department.

It does not seem possible that, in a town of your size, you would require to devote more than a whole floor to painting. You stated that the building was to be three stories and that some of the space was to be for storage, therefore we are practically forced to assign two floors for the latter purpose.

The paint shop has been placed on the top floor to give good light, and the various rooms have been designed so that the work can move more or less progressively through them, and at the same time all rooms are about equally accessible to the elevator.

The room containing the elevator entrance is a combined wash room and storage room. It is here that the mud and dirt would be removed when the car is first received. Also cars received or waiting for delivery might be stored here.

The elevator shaft must extend down below the first floor level since the side street is on a slope. Therefore, the restricted space below, slightly enlarged, seems to be the best place for coal bin and furnace. Since the entrance to the basement is directly from the street it is not necessary to have the elevator shaft extend down to the basement floor level.

If the plan does not suit, due to lack of sufficient information, we shall be glad to draw another if you will supply the details which are lacking.

## Missouri After Return Loads

KANSAS CITY, July 27—The Highways Transport Committee of Missouri, under the auspices of the National Council of Defense, has begun an active campaign for the establishment of Rural Express Routes and Return Loads Bureaus. Literature has been sent out by this committee to county officials, commercial clubs, good road enthusiasts and to every other person or organization where it is thought results may be obtained.

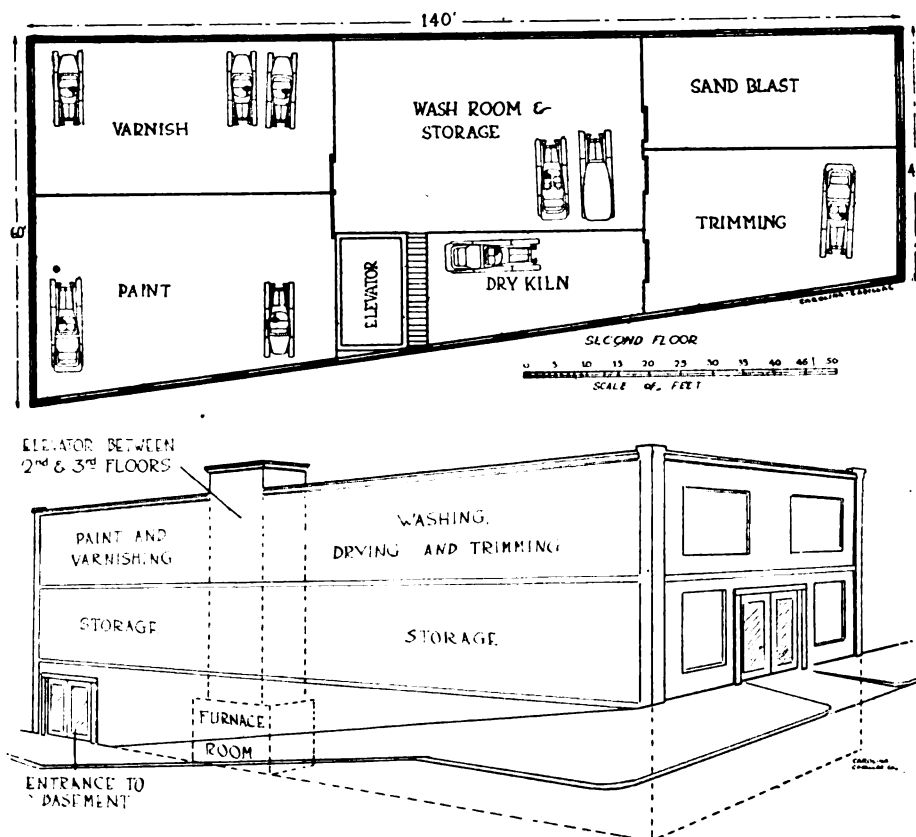
## Chalmers and Maxwell Dealers Retain Lines

DETROIT, July 27—Contrary to reports the Maxwell Motor Sales Corp. is not making a general practice of combining Maxwell and Chalmers agencies.

In a few instances the company has found it advisable to combine the field forces of the two lines and it has become a general impression that the company has been doing this all over the country. This is denied by the company. It states that the dealers are not being disturbed in the least, each agency is handling its respective line as heretofore. Not over six instances are on record within the past 6 months where a combination has been affected.

## Can You Beat This?

ST. LOUIS, July 27—The champion motor car theft story has come to light. A car was stolen from a man named Stein. Having much use for a car, Stein bought a new one. A week later his first car was recovered and the supposed thieves caught. Stein sold the old car. Eventually the thieves were sent to trial, and were freed on a technical point, not on failure of proof. They immediately replevined the stolen car from the man to whom Stein had sold it.



Above is a floor plan for the Carolina Cadillac Co. and below is a perspective sketch showing how the building should be laid out for greatest efficiency

A Department of

# BETTER MECHANICS

No. 76

## Electrical Systems on the 1918 Maxwell

### Part I—Ignition

**T**HE 1918 Maxwell car uses an Atwater-Kent ignition unit, the low-tension current being supplied by the generator when the engine is running and by the storage battery under starting conditions. This current is delivered through the ignition switch and wires to the top of the induction coil located on the base of the ignition unit.

The high-tension current for ignition is produced by the action of the low-tension current on the non-vibrating coil. This coil is not affected by heat, cold or moisture, and as there is no vibrator, there is nothing to get out of order and nothing to adjust.

Distribution of the high-tension current to the respective cylinders is made by the Atwater-Kent ignition unit, which is on the right side of the engine and is driven by the engine timing gears. The distributor block, which fits over the end of the timer shaft, delivers the high-tension current to the brass segments, which are permanently imbedded in the distributor cover, then through the high-tension cables to the plugs. The distributor block should just clear the distributor segments without touching them. If the block touches the segments, wear and arcing will take place, and if the gap is too great the spark will be weakened and rendered irregular.

#### Timing the Spark

If the ignition driving mechanism has been disassembled proceed as follows to correctly time the spark:

1. There is a punch mark on the rear end of the timer-driveshaft. This punch mark and the slot in the timer-drive-shaft coupling are to be assembled in line and on the same side of the drive-shaft center.

2. The timer-drive-gear and camshaft-gear are marked with a double punch mark on one tooth of the former and between two teeth of the latter.

3. In assembling the gears these double marks should be together and the single marks on the crankshaft and camshaft gears are together.

#### By J. HOWARD PILE

4. When the gears are so assembled No. 1 piston should be in firing position and the slot in the timer-driveshaft half of the coupling should be up.

5. Turn the crankshaft with the hand crank till No. 1 piston is  $1/32$  in. past top dead center, or  $1\frac{1}{4}$  in. past if measured on the rim of the flywheel.

6. Remove the distributor cover. It is held on by two spring clips.

(If the coupling has not been loosened on the timer-coupling-shaft, proceed as follows. If it has been loosened, skip Nos. 7 to 11 and start with No. 12.)

7. Turn the timer-coupling-shaft till the distributor arm is opposite No. 1 segment of the distributor cover. This is the front right terminal.

8. Turn the timer-coupling-shaft to the right or left a little till the coupling pin is in position to engage in the drive-shaft-coupling notch.

9. Keeping the timer in this position, couple it to the engine.

10. Bolt it to the bracket.

11. Connect the terminals in the proper firing order of the engine. Clockwise this will be 1-3-4-2.

(If the coupling has been loosened start here, skipping Nos. 7 to 11.)

12. Place piston and distributor in position as explained in Nos. 5, 6 and 7.

13. Retard the breaker by placing the spark-control hand lever on the steering wheel at the top of the quadrant.

14. Turn the timer-coupling by the knurled collar until the platinum points just break.

15. Hold the shaft in this position and turn the coupling on its shaft till the pin is opposite the notch in the driveshaft half.

16. Tighten the coupling clamp-screw.

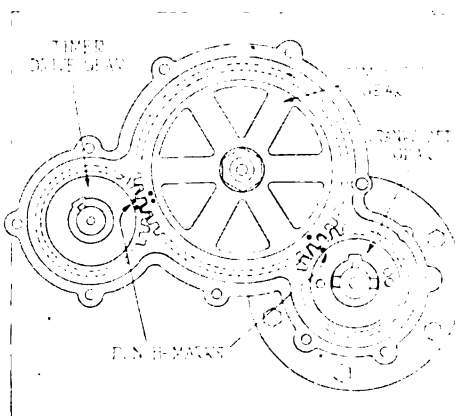
17. Connect the terminals as explained in No. 11.

**Lubrication:** Fill each of the two oilers with good light oil. One of these oilers lubricates the coupling shaft and the other lubricates the vertical timer and distributor shaft. *Don't get oil on the contact points.* Apply a little vaseline to the cam.

#### Testing for Ignition Trouble

Before deciding that any other part of the ignition system is out of order, see that the spark plugs are clean, have proper gaps and are not short circuited. Gage the points to between .027 and .03 in. (a little less than  $1/32$  in.). This setting has been found by experience to be best under all operating conditions. When testing the timer or ignition the switch key must be inserted and turned in the switch. Remove the key after testing.

If one or more of the cylinders are missing, stop the engine and remove the terminals from the spark plugs, leaving the high-tension wires in position. Start the engine and one at a time remove the high-tension wires from the plugs and hold the metal terminals about  $3/16$  in. from any metal part of the engine.



*Fig. 1—Punch marks on the gears to correctly time the ignition. The double punch marks go together and the single punch marks together*

The strength of the spark, if there is a spark, can easily be seen.

If the spark is weak, look at the contact breaker and see that the points are clean and that they are making and breaking contact correctly. The breaker opening should be .006 in., or about twice the thickness of the paper that this is printed on. If the breaker points seem to be all right look over the distributor-cover connections and see that they are properly and tightly connected.

If it is found impossible to start the engine, look over all the wiring connections. If they are all right, remove all the plugs from the cylinders and lay them on top in such a position that the points may be seen and the terminals are not grounded. Turn the engine over quickly with the hand crank, and if a spark occurs at the points of the plugs

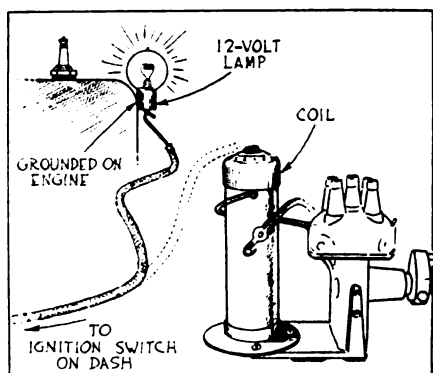


Fig. 2—Testing the ignition circuit with a 12-volt lamp, the outside shell grounded to the engine and the center contact touching the wire to the coil

this is positive evidence that the trouble is not in the ignition and can be looked for elsewhere, possibly in the carbureter or fuel line.

If there is no spark at the points remove the wire from the top of the coil. Using a 12-volt lamp bulb, ground the side of the bulb base on any part of the engine and touch the wire that has been removed from the coil to the bottom of the bulb base. If the lamp lights the battery is in good condition and the current is being delivered to the coil so that the trouble is most likely in the ignition unit.

Ignition wires should be free of grease and oil and should not be allowed to touch or rub on any metal parts of the engine or frame. Trouble is often caused by a wire which is broken inside the insulation and which does not show up on inspection.

## Part II—Starting and Lighting System

**T**HE starting and lighting is a single unit, one-wire system. The several units making up the system are the starter-generator, starting switch, panel with the fuses, lighting and ignition switch, automatic cut-out and regulator, and the storage battery.

Being a one-wire system, several of the units are grounded—that is, electrically-connected to the car frame, which serves as the return conductor from the unit to the source of current, which in any case is either the generator or the storage battery.

In disconnecting the wires from any unit of the system care should be taken to tape all exposed terminals to prevent them from grounding on any metallic part of the car. If any exposed terminal comes into contact with the engine, car frame or any metal part of the car, it would be likely to short circuit either the generator or storage battery and would damage either or both of these units to such an extent that they would be beyond repair.

### Starter-Generator

The starter-generator is mounted on the left arm of the flywheel housing close to the cylinder block. When used as a starting motor it is geared to the flywheel by a sliding pinion which is controlled and operated by the starting pedal. When used as a generator it is driven by the fan belt.

The belt should be so adjusted that it is taut enough to drive the generator and charge the storage battery and at the same time loose enough to allow it to slip on the generator drive pulley when the starter-generator is being used as a starting motor.

The starter-generator is a compound-wound machine and has two field windings, a shunt and a series. These windings are so proportioned and placed on the pole pieces that the machine when operating as a starting motor gives a maximum of turning effort to the flywheel and when operating as a generator gives practically constant current

when charging the storage battery, regardless of the engine speed.

There is only one winding on the armature, which is the only moving part of the machine when performing either of its functions. It is not advisable to use gasoline around the commutator because of the danger of fire from a spark from the brushes.

The fan belt must be kept properly adjusted. If it is excessively worn or stretched it will not drive the generator at sufficient speeds to generate the necessary current to keep the storage battery in position.

### Starting Switch

The starting switch is fitted to the left side of the gearset, the lock being attached to the inside of the switch bracket. The lock consists of a plunger pin which, when the starting switch is not being used, engages in a hole in the starting switch rod and prevents one from operating the switch when the engine is running.

To operate the switch, one must first unlock it and hold it unlocked until the starting pedal has been pushed forward.

The lock plunger pin is withdrawn from the starting switch by an electro magnet against the spring which, when the starting switch lock control button is released, forces the plunger pin back against the starting rod and into the hole as soon as the switch rod returns to its normal position.

The engine must be stopped before the lock will operate. This arrangement prevents one from pushing the sliding gear into mesh with the flywheel when it is moving.

The starting switch is operated by a pedal on the floorboard. In pressing the starting pedal forward to the full limit of its travel, the starter sliding pinion is forced into mesh with both the pinion on the starter shaft and the teeth of the flywheel.

If the sliding pinion teeth tend to bump against the teeth of the starter pinion or the flywheel, an increasing pressure

on the starting pedal compresses the inner spring on the starting switch rod and tends to drive the sliding pinion instantly and completely in mesh when electrical contact is made.

With the sliding pinion meshing properly with the starter pinion and flywheel teeth electrical contact is not made until the pinion and starting pedal have reached their ultimate throw. The outer spring of the starting switch rod is compressed when the starting pedal is forced forward. When the starting pedal is released this spring draws the sliding pinion from the starter pinion and flywheel teeth, and at the same time disconnects the starting switch contract.

### Dash and Switch Panel

The dash panel is on the instrument board. The fuses are reached by removing the cover marked "fuses." The dash panel is grounded to the instrument board cover because one of the windings of the cut-out and regulator is grounded to the panel. The indicator reads "charge" or "off," depending on whether the battery is or is not being charged.

### Automatic Cut-out and Regulator

The automatic cut-out and regulator is mounted on the rear of the dash panel and carries the indicator arm. Its function as a cut-out is to hold the cut-out point open upon starting the engine until the generator is driven at a speed high enough to generate 14 volts. It also opens the charging circuit whenever the voltage from the generator drops below that of the battery.

Should the cut-out points stick, the indicator will show "charge" after the engine has stopped. Should this trouble occur:

- 1—Remove the charging wire from the pole on the end of the generator where there is another small wire attached.
- 2—Remove field wire from the terminal on lower side of the field yoke.
- 3—Wrap the terminals with tape to prevent their grounding.

- 4—Clean off the cut-out and regular points.
- 5—Unwrap the terminals.
- 6—Replace the wires.

#### Dash Panel

Many of the electrical connections in this panel are soldered in place and need no attention. If a fuse is blown out in the lamp circuit, it will be indicated by failure of one or more of the lamps to light when the switch is turned on. Each fuse clip is marked, indicating the circuit to which the fuse belongs. A blown generator fuse will be indicated by the

indicator not showing charge when the car is driven at speeds exceeding 14 m.p.h. All fuses are 20 amp. and are interchangeable.

#### Panel Connections

There are eight terminal posts, three on the back of the lighting switch and five on the back of the fuse box for connecting the dash panel to the rest of the electrical system. These are marked "Ign," "Bat" and "Horn" on the back of the lighting and "Dyn," "Field," "Rear," "R. Head" and "L. Head" on the back of the fuse box.

The "Ign" terminal is connected by cables to terminal No. 1 at the top of the induction coil. "Bat" post is connected by No. 14 cable to the inside terminal post No. 6 of the starting switch and to terminal post No. 5 (horn). No. 5 post is connected by No. 18 cable to the horn button and circuit No. 5 to the terminal on the horn.

"Dyn" No. 2 terminal is connected by No. 14 cable to the large terminal post No. 2 "Dyn" on the generator, and field No. 3 terminal is connected by the same size cable to field terminal post No. 3 on the generator yoke.

Both rear and dash lamps are connected to rear terminals No. 8 while the right headlamp is connected to "R. Head" terminal No. 4 and the left headlamp is connected to "L. Head" terminal No. 7. No. 14 cable is used on all lamp circuits.

The cut-out and regulator is connected by wire to the fuse box terminals marked "Dyn" and "Field" and to the lighting switch terminal marked "Bat."

#### Starting Switch and Lock

The lock has but one terminal post, and this is connected by No. 14 cable through the lock control button to the positive battery cable connector under the driver's seat. One end of the lock coil winding is continuous and extends through the coil casing. It is connected to the outside terminal of the starting switch.

The starting switch has two terminal posts right and left which, under normal conditions, are connected by the starting switch contact levers inside the starting switch.

Under charging conditions these terminals are not connected, as the connection by the contact leads is broken when the starting pedal is released.

No. 6 terminal is connected by heavy No. 3 cable to the positive terminal on the storage battery and by heavy No. 14 cable to terminal post No. 6 on the back of the lighting switch.

Terminal No. 11 is connected by No. 3 cable to the positive terminal on the generator. No cable smaller than No. 3 gage should be used in connecting the generator to the starting switch and the starting switch to the storage battery.

#### Yellow Lenses Legal Now in Massachusetts

BOSTON, July 27—The Massachusetts Highway Commission has just announced that there has gone into effect a new regulation regarding headlights in the Bay State. The regulations have been approved by the Governor and Council, and so they take effect at once. They do not materially change the present law, but are framed so as to legalize the use of amber or yellow-tinted lenses in Massachusetts. Until now the amber and yellow lenses were against the law in this State, but the police have overlooked them until last year, when the question arose about them and it was decided to legalize them.

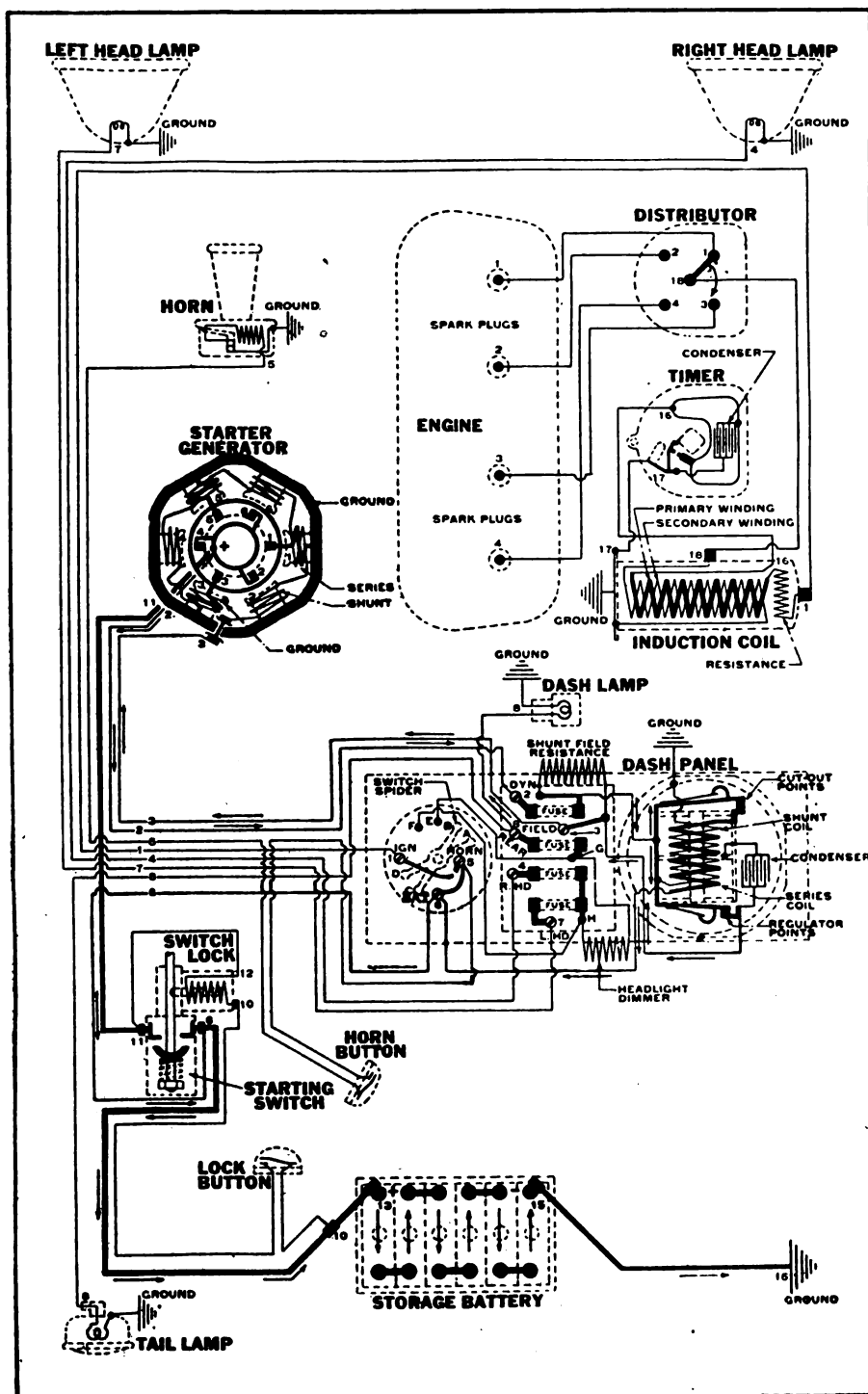


Fig. 3—Complete wiring diagram of the 1918 Maxwell showing ignition, charging starting and lighting circuits



# A Vision of the Future Farm Lighting Business

*Jim Flamm has to go to war so he passes  
his ideas on to those he leaves behind*

WHEN James A. Flamm of the Weber Implement and Automobile Co. of St. Louis was assigned to sell the Alamo farm lighting plant he had a vision of great possibilities.

He did not then think that the United States would call on men of his stature and eyes to fight the battle for democracy in Europe, so he was thinking only of the great future of the lighting plant business. He saw chiefly a catalog of the accessories that the farm folk could use with the lighting plant. This catalog was to him a bigger thing than the sale of the plants themselves.

Flamm told about this vision one morning after he had been drilling long and hard to make himself a good soldier. He learned some weeks ago that he could go as a soldier, and he entered into the spirit of that work with a vision bigger and broader than his selling plans. He began this work by drilling in advance of his call to service, and, the time of his departure being near, he gives his vision of farm lighting plant possibilities to those who care to read. He is now in a United States uniform.

"There are more than 40 accessories to a farm lighting system," said Flamm, "and most of the buyers of the plant are in circumstances to buy all of these articles if they need them—and most of them do."

"First, of course, comes the lamps. That business by itself is well worth time, trouble and preparation to handle. *It soon will grow to be a big thing, and soon will mean more than the sale of the plants themselves.*

"Then comes the milk separator, irons, fans, water system, sewing machines, churns, vacuum cleaners, washing machines, grindstones, emery wheels, cooking utensils of various kinds.

"Now, no good salesman should get this point wrong. A farmer likes fresh toast for breakfast just as well as any city man, and if he can come in from early chores with a keen appetite he will enjoy taking his toast from a toaster and eating it with his ham and eggs more than the city man, who goes from bedroom to breakfast room. And don't think the farmer cannot afford to do this, either.

"One of the best arguments for selling a lighting system to a farmer is that his wife then can have an iron, a vacuum cleaner, and electrically heated toilet articles, just as the city woman does. The farmer who can afford these things has

his motor car, and he wants to take his wife to town just as the city man takes his wife out. He wants his wife to be well groomed and fresh-looking, and he wants her to have the peace of mind that comes with her work at home well done.

"Of course, you hear much about another kind of farmer, but he breaks into print the most just because he is the exception. It is the same rule that causes the preacher who betrays his profession to get more notice, or at least more prominent notice, than the one who goes quietly about his way. Too many merchants get the wrong view of this thing.

"The lighting plant department is just like a portable engine, tractor, or—to get entirely away from our line—a talking machine department. The machine sale, in itself, is, of course, a big thing, but really it is only a means to the end.

"Every salesman knows that the talking-machine men sell the instruments as a means of building up a record trade. Once this is started it goes on in spite of itself.

"So, when you sell a portable steam engine or a tractor there is a world of accessories and other machines to go with them, and that the farmer will want, sooner or later, because they are convenient and economical. He really cannot do without them once he has power to run them.

"In the mere matter of hose this house does a big business because of the number of portable engines and tractors that it has sold that are in constant use every day.

"So it will come with the farm lighting system. It is the easiest thing in the world to sell. The cost does not run high, as the farmer thinks of money. All of the things he buys and sells run into dollars. He knows the price of tractors, motor cars, trucks, gang plows, etc. It is easy to talk to him about a \$500 proposition.

"The one great big argument that he always listens to is the less danger of fire. Every farmer dreads fire. Most of them can tell you how easy it is to fire a group of buildings with a lantern. A good many of them have had such losses, or narrow escapes. If he doubts, just refer him to the insurance man, or show him the statistics. The 100-light plant will, of course, cover practically all ordinary farm houses, barns and

## Jim Flamm Sparks on Lighting Plants

*Tell the truth about your plant. Overstatement kills prospects of future business.*

*Remember always that a farmer and his wife like nice things as well as townspeople, and that they have to buy them.*

*Selling a lighting plant should open the way for future business for years to come.*

*Put the lighting plant in your War Service Program. It economizes in giving better work conditions; it conserves in lessening fire hazard; it keeps up the morale by making people contented.*

*A well-used lighting plant, which illuminates a farm house, barn and other outbuildings, is as big an ad as an electric sign in town, IF THE BUYER IS CONTENT AND WILL TELL THE PEOPLE WHERE HE GOT IT.*

*Look at the electric accessory counter in any city supply or department store. Any of those articles can be fitted for the farm plant and sold to your plant customers—BY YOU.*

other outbuildings, aside from furnishing the smaller service wanted. The farmer likes to work in the light, so that appeals to him strongly.

"The mechanism of the plant does not worry him much. He has been used to machinery and to making things from boyhood. It is not wise to talk too much to a farmer about service, or your parts department. Call his attention to the 'how to fix' things rules. The farmer is easily frightened if you talk those things too strongly. He thinks you are afraid of the machine and are preparing an alibi.

"But the big thing is the accessory department, the follow-up sales, and here the seller has a real advantage. He is not like the city electric light company that persuades you to take its service, and then you go to a department store and buy accessories at cut rates.

"The voltage of the farm lighting systems is different from that of public service corporations, hence the farmer cannot drop into any store and buy, **AND YOU MUST NOT FORGET TO TELL HIM OF THIS.**

"Never overstate the possibilities of a plant to a farmer. Stick close to the truth and reap the benefit.

"It is just like selling a tractor that has a limit of a 20 per cent grade to a farmer with a hill farm. If you do, you never sell anything else to him and you have made an energetic 'knocker.' If you had inquired about his farm, stated the plain truth to him, and sold him a portable steam engine, you would have made a friend and many more sales.

# Repairshop Shortcuts

*From Motor World Mechanics*

## No. 1465—BENCH TUBE-BENDER

A device for either bending or straightening tubes and pipe is made in the form of a modified vise, the jaws formed to a half-round shape to fit the work and having a slight curve. The jaws or "dies" are forced together with a 1-in. bolt and the frame of the bender is made of 4 x 3/4-in. flat bar stock. The frame is bent up from one piece and is drilled and tapped in the double section. The whole device is secured to the bench with bolts and screws. The dies are made of cast-iron.—Charles H. Willey, Concord, N. H.

## No. 1466—AUXILIARY VISE-JAWS

Auxiliary vise-jaws to grip various standard parts are made from blocks of hardwood, the inner surfaces being cut out to fit the part in question. They meet at the bottom and a small wire spring is inserted in such a way that when the vise is opened the wooden jaws spring apart and release the work. A number of sets of jaws can be made and can be instantly put in or taken out of the vise.—T. O. Germain, Connecticut Telephone & Electric Co., Meriden, Conn.

## No. 1467—CASING FABRIC PULLER

A puller for pulling casing fabric loose is made in the form of a pair of pliers with long round nose and serrated inner surface so that the fabric can be rolled on them as it comes loose. This device is intended to do away with pulling the fabric off by hand.—Skow Auto Tire Repair Shop, Beatrice, Neb.

## No. 1468—VALVE-SPRING CUP INSERTER

A holder or inserting tool for valve-spring stops of the type which are slotted and slip into a groove in the lower end of the valve stem is made from a piece of iron wire about 1/2 in. in diameter. The wire is bent into a U-shape at the end, the span being slightly less than the diameter of the stop, so that the spring of the wire will hold the stop till it is in place, when the spring is allowed to come down and the disk goes down over the stop, forcing the holder down and off.—Ernest W. Helbig, Helbig & Daugherty Repair Shop, Aberdeen, Wash.

## Make a Dollar

*HOW often have you been compelled to rack your brain to overcome some difficulty? But when you did find a solution—what satisfaction it was! Well, here's a chance for you to dig some of those life-savers out of their hiding places and put them to work for your fellow-craftsmen. Send them to Motor World. We will pay you a dollar for every one accepted for publication.*

*The only requirements are these:*

*1—Describe the shortcut briefly but clearly, in few words.*

*2—Send a sketch, in pencil or pen, no matter how rough; our artists will finish the job.*

*3—Write on ONE side of the paper only.*

*4—Sign your name and initials, the name of the company you are with, and the town.*

*Write plainly. If your name is unusual, print it in capital letters.*

## No. 1469—LEAD BLOCK FOR PUNCHING

A lead block to be used for punching gaskets is made by pouring lead into a piece of pipe 3 or 4 in. in diameter and 1 in. long. The pipe prevents the lead from losing its shape under repeated hammering. The lead can be melted from old battery plates.—M. Gerard, Jr., Soderberg Garage, Galva, Ill.

## No. 1470—VALVE-SPRING PIN HOLDER

A holder for valve-spring pins is made from a cotter pin about 4 in. long. A small washer, the hole of which is a little larger than the diameter of the cotter pin, is slid onto the pin. The valve pin is then inserted between the legs of the cotter pin and the washer moved down till it forces the legs together, thus holding the pin so that it can be easily inserted in the hole in the valve stem.—John Rolfe, Rolfe Motor Co., Seneca Falls, N. Y.

## No. 1471—WASTE CONTAINER

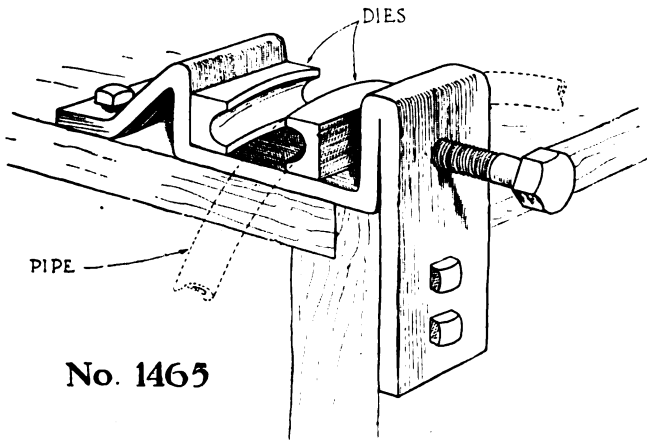
A waste container is made from a metal barrel or can, the inside being divided into compartments and a base made from metal pieces. The dividing pieces are made of sheet metal halved to fit each other and form a cross, the whole division piece fitting neatly into the can. The compartments are used for cotton waste, wiping cloths, rag waste and used waste. A cover for the can completes the job and will comply with the fire regulations.—Charles H. Willey, Concord, N. H.

## No. 1472—A TIRE GAGE THAT CAN BE BORROWED BUT NOT KEPT

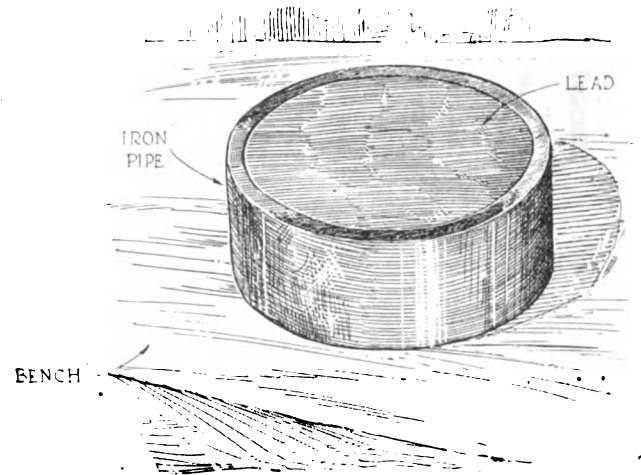
To prevent the shop tire gage from finding its way into the customer's pocket it is fastened into a piece of pipe of such a size that it will not be convenient or easy for anybody to carry it off. A piece of 1 in. iron pipe 1 ft. long has a hole bored 1 in. from the end, this hole being the exact diameter of the gage. The gage is then slipped through the hole and a couple of drops of solder hold it in place. A small hole bored in the other end of the pipe enables the gage to be hung on a nail.—B. M. C., Pacific Garage, Centralia, Wash.

## No. 1473—HOLDER FOR HOT RIVETS

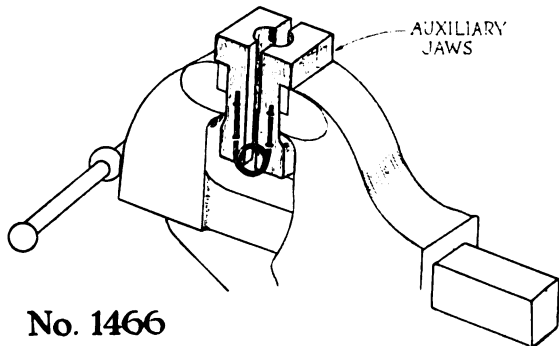
A holder for hot rivets used in riveting drive-shaft or axle housings is made from a piece of barrel hoop. Two slits are cut on one end, forming three tongues. The center tongue is bent down a little and the two outside tongues are bent up a little. The center tongue slides over the rivet head and the outside tongues slide under the head and straddle the body of the rivet. Different spacing of the slits allows different size rivets to be handled. The rivets can be slipped into otherwise inaccessible places.—Frank E. Griffin, David City, Neb.



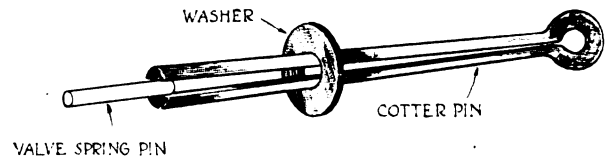
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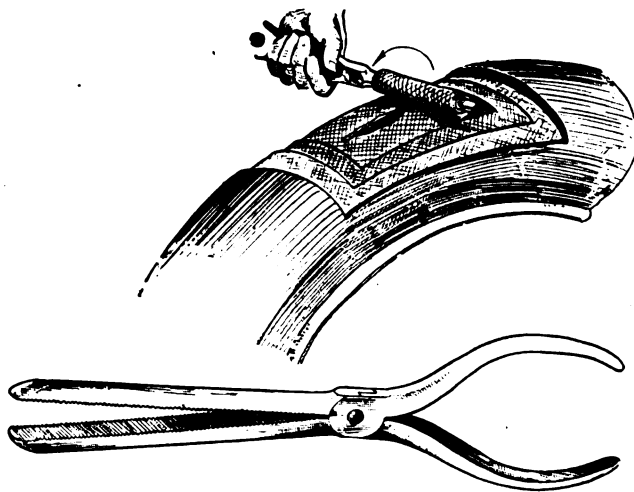
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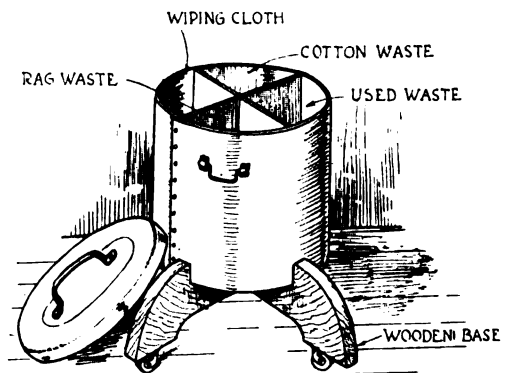
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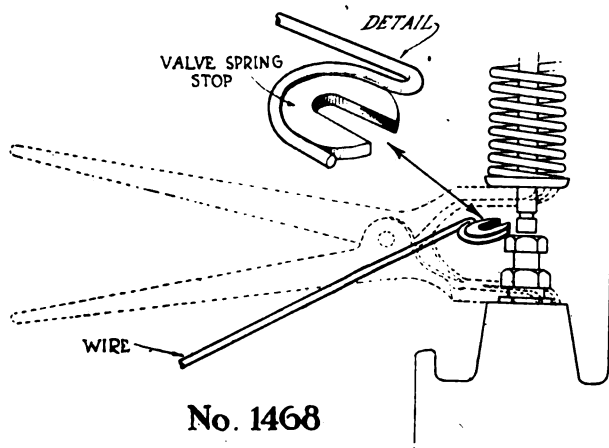
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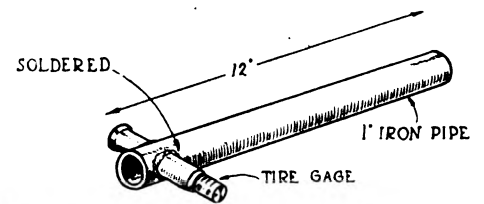
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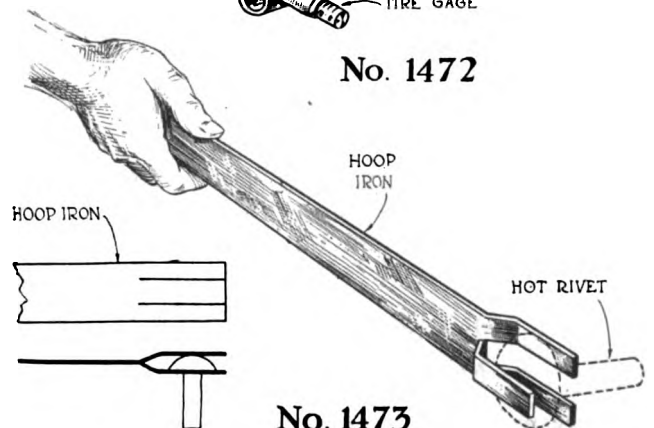
No. 1471



No. 1468



No. 1472



No. 1473

# Editorial Observation

## About War Conservation

**I**N connection with the conservation measures of the War Service Committee of the National Automobile Dealers' Association there are certain details that should not be overlooked if the plan is to operate with real success and without friction.

For example: If, as the committee recommends, there be one or more central emergency service stations or garages for night and Sunday service while the other places in town are closed, the location of these emergency stations should be amply advertised.

In some cities dealers and garagemen have mailed to all their customers cards giving the telephone numbers of the service stations, their locations and a statement of the charges for emergency service work. But in some instances the location of these stations has not been sufficiently advertised.

One method of advertisement that has been generally overlooked is the police department. All the policemen should be given information as to the location of the emergency stations and their telephone numbers, so that a motorist who wishes emergency service may "ask the cop" and get relief at once. This doubtless could be arranged through co-operation with the head of the police department.

In one town a motorist found a garage open and a man selling gasoline on Sunday, yet the garageman refused to sell the motorist a tail-light bulb to replace one that had broken. This was rather inconsistent,

but may have been due to the fact that the co-operation of the filling stations could not be secured and that the garagemen were selling gasoline as a competitive measure.

Some garagemen have asked by what authority the recommendations are made. The explanation follows: The Commercial Economy Board at Washington asked the dealers to work out by themselves certain economies and waste eliminations—as other trades have done. These were worked out by the dealers' War Service Committee.

The Commercial Economy Board then asked—not ordered—that these recommendations be put into effect by the War Service Committee and that the trade show the same spirit of co-operation that other trades have shown in effecting economies. Wherefore the committee began its conservation campaign, as everyone knows.

Chairman Vesper of the War Service Committee explains that the greatest reason for observing these recommendations is that they show that the trade is trying to co-operate with the Government. There is more non-essential motoring nights and Sundays than during business hours, he states, and the willingness of the trade to close nights and Sundays is an indication that the dealers and garagemen are anxious to do all they can to eliminate the strictly "pleasure" element in motoring.

## Encouraging

**R**UMORS that have been given wide publicity in the newspapers during past months have done the automotive industry a lot of harm, and it is encouraging to find one of the country's best newspapers in an editorial "calling down" another good newspaper for having made a misstatement concerning the Liberty motor. The New York World of Saturday, July 13, in an editorial says:

### The Real Value of the Liberty Motor

A very common misconception of the American aircraft program finds expression in a *Times* editorial:

There would probably never have been a German spring offensive and a crisis in the situation on the western front if the American aircraft program had been put in the hands of a master organizer like Mr. Ryan, a year ago, and a manufacturing corporation had been created to carry out his plans. The designs of the best French and British motors would have been accepted, and they would have been turned out in quantity while an American motor was being developed.

What Mr. Ryan might have done if he had had charge of aircraft production from the outset is a matter of conjecture; but there can be no quantity production of "the best French and British motors." They are hand-work, and hand-work does not admit of quantity production.

The triumph of the Liberty motor

does not lie in its superiority to all other motors, for it is only one of several first-class aircraft engines, but in its standardization. It can therefore be turned out in great quantities, most of the work being done by machinery, and the production can be increased indefinitely.

That is why the British and French Governments have been so eager to adopt it. The situation demands a motor that can be manufactured rapidly in large quantities, and the Liberty motor is the only one that fulfils those conditions.

With the better newspapers coming to a true understanding of the situation there should be a trifle less rumor peddling than heretofore.



## Letters from Readers

**THIS** page is for the use of *MOTOR WORLD* readers with something to say. Letters on subjects of interest to dealers, garagemen, repairmen and jobbers are always welcome.—EDITOR.

### Patriotism Plus

Editor Motor World: We have been reading in several of your last issues the patriotism shown in various parts of the country by the automobile men.

We are enclosing you a copy of our statement to the public of our patriotic intentions in this county. We are the first in the State of Indiana to form such an organization.—The A. L. Maxwell Co., E. S. Robinson, Branch Manager, Princeton, Ind.

#### Statement to the Public by the Gibson County Automobile and Supply Association

The managers of the various Gibson county firms named below met in Princeton July 15, 1918, and formed an association which will hereafter be known as The Gibson County Auto and Supply Association. The purpose of the organization includes both patriotic adherence to the new conservation policies of the nation and better business conditions. It is a well known fact that more gasoline is being consumed than will be the case under more centralized organization, and the reasonable saving of gasoline now will mean less stringent orders for the future. Mr. Weese, county fuel administrator, was present at the meeting and he heartily endorsed the movement undertaken by the automobile firms of the county. The following officers were elected to serve one year: E. S. Robinson, Chairman; E. L. Armstrong, Secretary.

In brief, the object of the organization is for the purpose of conserving gasoline, lubricating oil, light and manual labor, and to make what labor we have more efficient; to operate our businesses more economically and to get our businesses on a higher standard in what we consider for the good of the community and ourselves.

Resolutions adopted provide for these conditions and schedules to be in effect on and after Sunday, July 21, 1918:

1. Co-operation.
  2. Cash basis.
  3. Repair shop hours: 7.00 a. m. to 6.00 p. m.; positively no overtime, Sunday nor holiday work.
  4. Accessory stores, parts department, gasoline and oil stations will be open through the week days from 6.00 a. m. until 6.00 p. m., except on Saturdays, from 6.00 a. m. until 10.00 p. m. Closed on Sundays and holidays.
  5. Repair shop rates: First mechanic, \$1 per hour; second mechanic, 80c per hour; third mechanic or helper, 60c per hour. Pull in rates mechanic's time plus 50c per mile, ambulance service extra.
  6. Storage rooms open from 6.00 a. m. until 10.00 p. m. Storage rates in Princeton, Hazleton and Oakland City: Passenger cars, \$5.00 per month; truck, one ton or over, \$8.00 per month; weekly storage, \$2.00; day storage, 25c, and night storage, 50c.
  7. Storage rates in Owensville, Ft. Branch and Haubstadt, passenger cars, \$4.00 per month; one ton truck or over, \$6.00; weekly storage, \$2.00; day storage, 25c, and night storage, 50c.
  8. Washing cars, \$1.50 up.
  9. No demonstrating cars on Sundays.
- Signed—Tribble & Vandever, Haubstadt; Meny Bros., Haubstadt; Fort Branch Auto Co., Fort Branch; Arthur Austin, Fort Branch; Madden Auto Co., Owensville; Central Garage, Owensville; Reinhart Motor Co., Princeton; Standard Oil Fill. Station, Princeton; W. A. Mossman & Son, Princeton; A. L. Maxwell Co., Princeton; A. L. Maxwell Co., Oakland City; Hill Bros.,

Princeton; Reinhart & Reed, Princeton; Armstrong Auto Co., Princeton; Armstrong Auto Co., Hazleton; M'Fetridge & Cassidy, Princeton; M'Fetridge & Cassidy, Owensville.

### Well Arranged Store

Editor Motor World: We are mailing you photographs of the United Accessories Co. store in Cumberland, Md., in which we are interested.

This concern recently occupied its new quarters, which are really quite creditable for a town Cumberland's size.

The new establishment has a fairly metropolitan aspect, and is far and away superior to anything else in Cumberland, so the statements are not overdrawn.

The United Accessories Co. started in business April 1, 1915, in a small store-room at 20 North Center Street, Cumberland, Md. The business grew so rapidly that it was soon necessary to provide larger quarters, with the result that on Nov. 20 last new quarters were occupied at the corner of Center and Frederick Streets, on a direct line with the National Highway.

The new establishment has 5000 ft. of floorspace, and is the largest and finest equipped salesroom of its kind in the State of Maryland. In the front of the



**INTRODUCING** Miss Myrtle Kerner of St. Louis, the first girl clerk in a gasoline filling station in St. Louis. She is employed by the Texaco Oil Co., and more girl clerks are coming, say her employers. She wears pink striped overalls.

store is a desk and telephone for the accommodation of tourists. It is comfortably furnished and inviting. On the second floor is a tourists' rest room, where Motor World and other magazines appealing to motorists, maps, a copy of the latest Blue Book, etc., as well as easy chairs, are provided.

There is also a room for the meetings of the Automobile Dealers' Association



Home of the United Accessories Co., Cumberland, Md.

of Cumberland. J. H. Miller, manager of the United Accessories Co., is secretary and treasurer of this association.

The United Accessories Co. deals in automobile supplies exclusively, and has as its motto: "Everything for the Motorist." None but goods that have been tried out and found to be of merit are carried.—The Johnstown Automobile Co., Clyde C. Ashcom, Advertising Manager, Johnstown, Pa.

### We Won't Kick

1

Since I've read the propaganda

In this "work or fight" campaign,  
I've been thinking 'bout the Speed Cops;

If they draft 'em who'll complain?

In that list of non-essentials

I can't think of anything

That would make for more contentment,

Or would greater pleasure bring,

Than to see a squad of Speed Cops

Bound for somewhere out in France,

Where they'd lay in wait for Germans.

Oh, poor Germans! What a chance

You would have against these experts

If they'd only bring to bear

Half the strategy and cunning

They expend on us out here.

2

I have driven many motors,

Covered many a weary mile,

And it wrecks my disposition

To be followed all the while

By some slinking, lynx-eyed speed cop,

All intent upon his prey,

And whose notion of a sportsman

Is "a man who makes 'em pay."

What a lot more joy in living

There would be for every one

If they'd put the pesky Speed Cops

In the tanks to fight the Hun.

If I write to Mr. Crowder

Of this "Work or Fight" campaign

And he orders out the Speed Cops,

Are there any who'll complain?

—N. R. Cooper, secretary-treasurer, Fresno  
Automobile Dealers' Association, Fresno,  
Cal.

### Soldiers Ride in Davenport

DAVENPORT, IOWA, July 27—The Tri-City Automobile Trade Association is distributing among the car owners windshield stickers inviting soldiers and sailors to "salute and ride."

### Boston Cadillac Aids Red Cross

BOSTON, July 27—The Cadillac Automobile Co. of Boston has established the Cadillac Red Cross Chapter, and this week Manager Albion L. Danforth, who is in charge of it, held a dancing party in the salesrooms for the benefit of the organization. The cars were cleared away and the salesrooms decorated with flags and flowers. There was dancing until midnight, with refreshments served at Mr. Danforth's expense. The affair netted the Red Cross more than \$100.

### Another Dealer Adds Trucks

BOSTON, July 27—More evidence of dealers in passenger cars joining the truck ranks to pay overhead is found in the announcement of the Mitchell-Lucas Co., agents for the Mitchell and the Templar, taking on the Sullivan truck for Massachusetts.

## Two Years a Salesman



MRS. E. Y. STIMPSON

MRS. STIMPSON has been selling cars in Boston for two years or more and has in that time shot to pieces most of the Sunday supplement stuff on women in salesmanship. She encounters no "unusual conditions," no "strange psychology," no "inherent advantages." She simply sells Detroit and Milburn electrics as they ought to be sold by any salesman—and that's about all there is to the story, except that her husband is the dealer. But she is not a wife who "tried her hand at the job" as a pastime. She was a real salesman before she was Mrs. Stimpson.

# The RETAIL NEWS

## CANADA

The Coast Motor Co., Vancouver, B. C., has opened a garage and salesroom on Main Street and Seventh Avenue, under the management of Whitworth & Mears. The company will distribute Hupmobile, Haynes and Briscoe cars and Garford trucks.

The Gray Dort Distributing Agency, Vancouver, B. C., has added the Franklin line, and will shortly move to a new garage recently built at Granville and Pacific streets.

## PACIFIC COAST

J. W. Foell has opened a vulcanizing shop at Alhambra, Cal.

E. Schultz has opened a repairshop at Twenty-fourth Street and Webster Avenue, Oakland.

C. D. Dixon, manager of the Howard Motor Co., Pasadena, Cal., has taken over the Buick agency at 1734 Cahuenga Street, Hollywood, Cal.

The Gill Piston Ring Co. has moved to more spacious quarters at 803 Van Ness Avenue, San Francisco.

Pratt & Williams, distributors of the Ralston truck attachment, have enlarged their premises at Van Ness Avenue and Fulton Street, San Francisco.

J. C. Atkin has purchased the repairshop at 395 Franklin Street, San Francisco.

The Superior Tire & Repair Co. has closed its Oakland branch and will conduct its business at 1650 Pine Street, San Francisco.

The Kanzee Tire Co., Ltd., has opened a repair plant at 782 Turk Street, San Francisco.

C. H. Richards of the Mission Garage, Van Nuys, Cal., has taken over the Van Nuys Garage, formerly managed by C. C. Peters.

Lull & Evans are the new managers of the garage formerly conducted by C. E. Brown at 115 South Milton Avenue, Whittier, Cal.

## New Garage

American Garage .....  
Locust & California streets, San Francisco

## SOUTHWEST

The Cowley County Motor Co., Arkansas City, Kan., which has been located at 116 North Summit Street, is moving into the building recently vacated by the Summit Auto Company.

M. R. Benson has moved his automobile company to Anthony, Kan., from Harper, Kan.

William Chamberlain, Chapman, Kan., has sold his garage to W. B. Hanson.

Jim Edenfield, Geuda Springs, Kan., has purchased a garage in Oxford, Kan.

Fred Kuhne, Larned, Kan., has bought the interest of Charles Price in Kuhne & Price and has taken charge.

E. Amole, Lyons, Kan., has bought the Motor Inn from Dan Nash.

J. H. Blocker, Marysville, Kan., has moved his tire repairshop from 519 Broadway to 107 South Fifth Street.

The C. E. Dyer Motor Co. has opened quarters at Salina, Kan.

Ben Andrews, Bethany, Mo., has bought the J. W. Harrison garage.

The Clarence Auto Co., Clarence, Mo., will move from the Culver Bldg. to the new garage.

The Crystler Motor Co., Caruthersville, Mo., has bought the metal works of Frank Silver.

James Flanagan & Son, Fairfax, Mo., has bought the garage of B. Wise.

C. R. Urle, La Mont, Mo., has succeeded De Rackin & Urle in the La Mont Garage.

The Dollar Auto Livery Co., St. Louis, will move into new quarters at 2800 Pine Street within a few days. The new garage will have a capacity for fifty cars.

The Standard Roller Bearing Co. of Philadelphia has opened an office in St. Louis at 3126 Locust Street with Charles O. Dixon as manager. The St. Louis district will comprise southern Illinois, Missouri, Kansas, Nebraska, Arkansas, Mississippi and Tennessee.

The Henry Motor Service Co., that is serving St. Louis automobile dealers and manufacturers as official service station for night and Sunday work, has just been authorized to give emergency tire service to the motorists when they supply the tubes and the casings.

Robert G. Weightman has opened a new tire and vulcanizing station under the style Central Tire Co. at 100 North Twelfth Street, St. Louis.

The Grand & Gravois Automobile Co. has been organized in St. Louis with capital of \$15,000. A new supply station and salesroom have been opened at 3660 Gravois Avenue. A. J. Deitrich is president, Theo. Mueller vice-president, and E. L. DeWinter secretary and treasurer. A complete line of accessories and tires will be carried.

The Nichols-Cox-Woodall Sales Co., distributor of Brunswick tires and tubes, expect to close their salesroom and service station at 5156 Delmar Block, St. Louis, next month. The members of the company have all been called by the government for service. J. M. Nicholls is now in the aviation section, D. A. Cox has joined the Navy, and R. L. Woodall is awaiting his call next month.

The Miller Tire Service Co., St. Louis, has succeeded the Fishell Co. as distributor of Miller tires for the St. Louis territory. Headquarters will be continued at 3567 Lindell Block.

The R. T. Motor & Auto Repair Co., St. Louis, has opened a new shop at 1406 South Eighteenth Street. John Taugner and N. P. Rosenhoffer are the managers.

The Scudder Motor Truck Co. is making plans to move into new quarters at 3958 Laclede Avenue, St. Louis, where it will have more than 30,000 sq. ft. of floor space. L. H. Amrine, manager of the company, says that he will start a system of strict inspection for the service trucks in use of the various commercial firms of the city.

The Wielandy Reller Auto Equipment Co. has moved into new quarters at 1610 Locust Street, St. Louis.

The Kardell Motor Car Co., Reo distributor for St. Louis, has leased another building to take care of its expanding business.

The Briscoe Motor Sales Co. has moved to its new building at 2925 Locust Street, St. Louis. President Frank Bishop of the company has issued invitations to the general public for the formal opening this week.

Paul Doran, Santa Fe, N. M., has taken over the Clesson Garage.

The Stanley Garage, Atoka, Okla., has bought the Atoka Garage.

Claud Beard, Bokchito, Okla., has bought a half interest in the City Garage. The business is now styled Sales & Beard.

J. M. Miller, Bartlesville, Okla., has bought the Bartlesville Battery Co. from D. E. Johnson.

Dell Stammer, Bartlesville, Okla., has bought the O. T. Garage.

Mansur & Taylor, Okemah, Okla., have bought the Okemah Garage.

Jim Lowry, Sayre, Okla., has bought the interest of his partner, Fletcher Lowry, in the Palace Garage and is now sole owner.

F. W. Dye, Tulsa, Okla., has taken over the Packard and Federal branches.

The J. S. Mize Motor Co., Waurika, Okla., has gone out of business.

Clyde L. Brown, Wetumka, Okla., has bought the interest of Mrs. Odio Vaughan in the Ford Service Station and is now in charge of the business.

The Chambers-Wilson Motor Co., Bryan, Tex., has bought the business of Johnson & Rohde.

T. B. Morris, Coleman, Tex., has bought the interest of his partner, S. F. Brown, in the Overland Garage.

Marlon Cundiff, Mexia, Tex., has bought the business of W. O. Colwell.

The Baxter Motor Supply Co., Nacogdoches, Tex., is the style of the new firm which is the consolidation of the Nacogdoches Garage Co. and the Baxter Garage.

The Central Motor Co., Waco, Tex., is enlarging its warehouses.

## New Garages

Pumpelly & Wilkinson.....Cedarvale, Kan.  
Daney Oldsmobile Co.....Kingman, Kan.  
J. L. Tolar.....Kingman, Kan.  
Charles Price.....Larned, Kan.  
A. E. Weikert.....Leavenworth, Kan.  
Hawley Bros.....McPherson, Kan.  
O. A. Kentner.....Mound, Kan.  
H. A. McGuire.....Pittsburgh, Kan.  
Bryant & Lindblom.....Salina, Kan.  
L. G. Thomas.....Seneca, Kan.  
E. A. Bricker.....Pleasant Hill, Mo.  
Terminal Garage.....St. Charles, Mo.  
Swift & Co.....St. Joseph, Mo.  
Church & Harrison.....Bartlesville, Okla.  
J. F. & F. B. Wolfinger.....Boynton, Okla.  
W. Hughes.....Cherokee, Okla.  
The Miller Motor Co.....Okarohe, Okla.  
R. A. Bond.....Houston, Tex.  
The Lester Auto Co.....Orange, Tex.

## MIDDLE WEST

The Modern Automobile & Garage Co., Belleville, Ill., has moved to new quarters at 500 East Maine Street, which are five times as large as the former quarters. Sales and service stations have been opened by the company at Rock Road, Ill., Mascoutah, Ill., and New Athens, Ill.

Harry Perlight, Fairbont, Ind., has purchased the garage of W. H. Jones.

Ungers Garage, Marion, Ind., has opened a new salesroom for the Allen and Hupp at 114 East Sixth Street.

E. J. Ellerman, Warren, Ind., has bought the interests of Kelsey & Bailey, Ford agents, and will move to a new building on Third Street.

The Cadillac-Overland Co., Cadillac, Mich., has changed its style to the Cadillac Battery Co., and has discontinued the sales of the Overland car. The battery sales and repair departments will be continued.

The Wetmore-Quinn Co., Detroit, has been taken over by the Paige-Detroit Motor Car Co. and will be operated as a factory branch. Active members of the company were J. M. Wetmore and Hugh Quinn. The change in the ownership of the company does not in any way interfere with the merchandising or the service. A. L. McCormick, formerly general manager of the Bemb-Robinson Co., has been appointed general manager of the company.

The George W. Franklin Co., Detroit, operating two places of business, 700 Woodward Avenue and 936 East Jefferson Avenue, will discontinue business on August 1 for the duration of the war. The company has for the past six months been Detroit factory distributor for the White trucks and Dort cars. It is understood that both the Dort Motor Co. and the White Motor Co. will make immediate arrangements for representation in this territory.

The Western Michigan Paige Co., Grand Rapids, has changed its style to the Automobile Vehicle Co.

Roy K. Nevins, Lansing, has purchased the Lansing Garage & Sales Co., agent for the Dodge Brothers car.

H. V. Chapman, Toledo, has absorbed the business of the Toledo-Standard Motor Co. The business in the future will be conducted under the style Chapman-Standard Motor Co., with sales and display rooms at Madison Avenue and Tenth Street.

#### New Truck Dealers

Stegeman Truck Sales Co. (Stegeman),  
Detroit  
Lucas & Christianson Co. (Stegeman),  
Cleveland  
Cleveland Maxfer Truck Co. (Panhard),  
Cleveland  
Crow-Elkhart-Cleveland Sales Co. (Collier),  
Cleveland  
H. V. Chapman (Standard).....Toledo  
Ohio Wholesale Auto Co. (Collier).....Toledo  
Brad Ford Motor Co. (Stegeman),  
Appleton, Wis.  
Wisconsin Auto Sales Co. (Stegeman),  
Fon du Lac, Wis.  
G. E. Hughes (Stegeman).....Janesville, Wis.  
Dicke Motor Car Co. (Stegeman),  
Manitowac, Wis.  
Creek Motor Sales Co. (Collier).....Milwaukee  
Winnebago Auto Co. (Stegeman),  
Oshkosh, Wis.  
A. J. Tank (Stegeman).....Rhinelander, Wis.  
Meyer Brothers (Stegeman),  
St. Martins, Wis.  
Black Auto Co. (Stegeman).....Sheboygan, Wis.  
G. A. Gullikson Co. (Stegeman),  
Stevens Point, Wis.

#### New Garages.

John Linn.....Peoria, Ill.  
Gus Schanz.....Quincy, Ill.  
Mackinaw Trall Garage....Reed City, Mich.

#### EAST

George M. Miller, Brookline, Mass., and William A. Pervier, of the same town, have combined their automobile repair businesses and will conduct them under the style Milvior Co. at 20 Washington Street, Brookline.

Steven Brothers, formerly located at 1145 Bedford Avenue, have moved to new quarters at 151 Fourth Avenue, Brooklyn.

Arthur Owen and Aaron Bach have formed a partnership to carry a full line of accessories and do repair work. The business will be conducted under the style A. W. Owen & Co. at 1116 Bedford Avenue, Brooklyn.

M. Brenner & Sons Motor Co., Third and Hamilton Streets, Harrisburg, Pa., has purchased the Harrisburg Auto Co.'s garage and storerooms and is rebuilding them into a modern supply house for motor cars, with improved garage facilities. The company formerly was at 638 Herr Street. C. C. High has been placed in charge of accessories.

Arnold Brothers, Inc., has purchased the business of the Hudson-Bander Motor Car Co. at Kane, Pa. The business will be conducted under the style Kane Motor Sales Co. The Arnold company is located in Ridgeway, Pa.

The Hamilton Tire Co., Harrisburg, Pa., has opened a store and repair shop at 250 Hamilton Street.

Fleming Brothers, Philadelphia, have bought the garage of E. C. Darnell at 5134 Ridge Avenue.

H. Keiner, Philadelphia, has purchased the two story brick and steel garage at Fifty-ninth and Media Streets.

#### New Garages

A. M. Repettis,  
Fifty-first St. and Osage Ave., Philadelphia  
John J. Holt,  
Main and Harvey Streets, Philadelphia  
Max Silverstein,  
856 North Eleventh Street, Philadelphia  
S. Haas,  
3943 North Broad Street, Philadelphia  
Thomas Margerison,  
1106 Magee Street, Philadelphia  
H. L. Truckness,  
616 North Fifty-seventh Street, Philadelphia  
F. W. Mumford,  
5901 Cedar Avenue, Philadelphia  
S. A. Ireland,  
4685 Leiper Street, Philadelphia  
G. H. Farrell,  
64th St. and Greenway Ave., Philadelphia  
James Dally,  
4830 North Howard Street, Philadelphia

#### NORTHWEST

B. M. Gross, Brayton, Iowa, has bought the garage and repairshop of Ralph Juhl.  
Klay & Ver Dorn, Doan, Iowa, have bought the garage of Boscaljon & Brahm.  
J. W. Dally, Kanawaha, Iowa, has purchased the tire business of E. C. Schroeder.  
R. B. Smith, Lincoln, Iowa, has bought the garage of Jack Pattee, Glenwood, Iowa.  
Munson Brothers, Milford, Iowa, have sold their garage to the Milford Plumbing Co.  
The Durbin Auto Co., North Platte, Neb., is remodeling the ground floor of the Masonic Temple for use as a garage.  
Frank H. Jackson, Red Oak, Iowa, has opened a repairshop.

Tom Shank, Red Oak, Iowa, has purchased the Red Oak Garage from A. G. Larson.

P. L. Staley, Storm Lake, Iowa, has bought the repairshop of Frank and Fred Jordan.

Walter Overton, Alliance, Neb., has bought the King Garage.

Joe Moore, Anselmo, Neb., has bought the Kennedy Garage, Merna, Neb.

Henry Slemers, Berlin, Neb., has bought the Bredahoft Garage.

John Ford, Big Springs, Neb., has opened a repairshop in the building formerly occupied as a garage by H. L. Moore.

Larson & Jacobson, Blair, Neb., have dissolved partnership in the Blair Garage, Larson retaining control.

W. R. Silvers, Bradshaw, Neb., has closed his garage.

F. F. Hansen and N. B. Phillips, Colon, Neb., have closed their garage.

Jens Torring, Deshler, Neb., has bought the garage of the Superior Motor Co.

Ernest A. Hager, Fairbury, Neb., has opened a repairshop.

The White Auto Co., Fairmont, Neb., has been purchased by John Atwood, Medicine Hat, Canada.

W. G. Mercer, Fremont, Neb., has bought the garage of Rudy Marek.

Fuller Brothers, Gresham, Neb., have bought the garage of Cecil Bates, Thayer, Neb.

Miller & Greeley, Holbrook, Neb., have bought the Thayer Garage.

Carl Bogle, Hartington, Neb., has opened a repairshop.

Irving Glina, Hastings, Neb., has bought the garage of Bert Morledge.

The Thayer County Motor Co., Hebron, Neb., has bought the Service Garage.

Miller & Greeley, Holbrook, Neb., have bought the garage of T. G. Ried.

True Miller, Marsland, Neb., has bought the garage of James Kellar, Alliance, Neb.

N. E. Leonard, Pawnee City, Neb., has bought the Night & Day Garage from B. R. Henry.

Fred Dent, Paxton, Neb., has sold his garage.

R. H. Keaton, Polk, Neb., has bought the F. J. Hahn Garage.

Bernard Peterson and Arthur Larson, Red Oak, Iowa, have bought the interest of Frank H. Jackson in the Red Oak Garage.

The Riverton Garage, Riverton, Wyo., has been bought by S. R. Roberts, Sterling Col.

Kopac Brothers, Schuyler, Neb., have bought the Haney Auto Supply Co. of Norfolk, Neb.

H. E. Griggs, Wayne, Neb., has opened a shop for building truck bodies.

Arthur Wendt, West Point, Neb., has bought the West Point Garage.

Don McGuire, Wymore, Neb., has bought the garage of Gardner Tejeka.

Martin Sorenson, Goodwin, S. D., has bought the automobile stock of Ben Kleigle.

The Automobile Owners' Tire Corp., Huron, S. D., has opened a branch office at 933 West Third Street.

George Williams, Marlon, S. D., has bought the William Cramer Garage.

Ed. Lessert and Fred Bowdish, Martin, S. D., have bought the business of Charles Boneline in the Martin Garage.

W. B. and Roy Lawrence, Stratford, S. D., have bought Rock Brothers' Garage.

E. O. Frescoln and Frank James, Winner, S. D., have bought the Red Arrow Garage business and supplies.

#### New Garages

Will Brown .....Logan, Iowa  
Sam S. Hanson .....Nevada, Iowa  
Lester Garage .....Perry, Iowa  
Glen Bohanan .....Prescott, Iowa  
H. R. Crissey.....Spirit Lake, Iowa  
Sinclair Co. ....Traer, Iowa  
C. A. Stadbauer.....Brainerd, Minn.  
Ore & Childs.....Deerwood, Minn.  
Lyons, Lee & Morgan.....Goodhue, Minn.  
H. E. Sprague.....Gully, Minn.  
Holtclaw & Freeman.....Moorhead, Minn.  
Jacob Rupp .....Pillager, Minn.  
Carow Brothers .....Proctor, Minn.  
B. F. Mowry.....Springfield, Minn.  
J. D. Schneider.....Springfield, Minn.  
William Klusendorf .....Welcome, Minn.  
Crites & Stokke.....Havre, Mont.  
Elefson Auto Co.....Casselton, N. D.  
H. J. Halverson.....Haynes, N. D.  
Ginther-Papke Auto Co.....Morristown, S. D.  
Cap D. Jones (addition).....Sioux Falls, S. D.  
Walter Etel .....Tulare, S. D.  
John Windt .....Worthing, S. D.

#### MOUNTAIN

The Lee Auto Co., Thermopolis, Wyo., has added the Fordson tractor and will make its headquarters at Basin, which is the center of the farming district in which it will operate. The company will probably be re-incorporated under the style Lee Automotive Co.

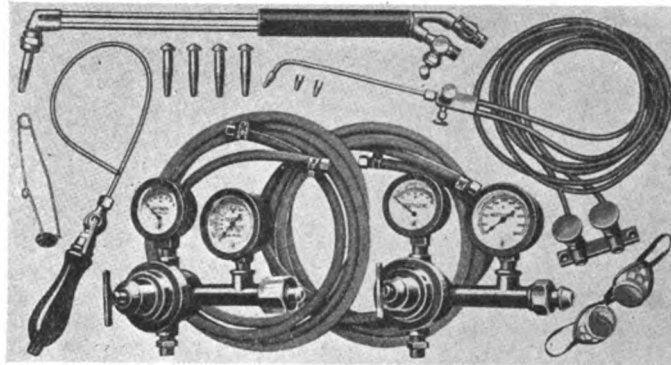
George Smith, Laramie, Wyo., is remodeling the old Turner store building for a garage.



# Automotive Equipment

## REGO WELDING AND CUTTING APPARATUS

Welding and cutting apparatus for oxy-acetylene use is made in several different outfits for cutting, welding and lead burning. The different outfits vary in the size of torch, length of tubing, size of gages, etc. Each outfit is complete for the purpose intended, and includes dark glasses, Pyro lighter, clamps, hose connections, etc. Prices range from \$30 to \$115. The outfit illustrated is prepared for automobile welding and battery service and includes 17-in. torch, five nickel-copper tips, 2-in. oxygen regulator, 2-in. acetylene regulator, 12½-ft. lengths of hose, glasses with dark lens, Pyro lighter, decarbonizing torch, lead-burning torch with two tips and 6-ft. lengths of hose, bench block, clamps, hose connections, etc. Price for this model \$65.—Bastion-Blessing Co., W. Austin Avenue and La Salle Street, Chicago.



amperage and increasing the voltage. The amount of intensification is controlled by the position of the button, which either lets the current go through direct as it came from the distributor or cuts in with the condensers. The case is constructed of porcelain. Made for four cylinder cars only. Price, \$6.—Alsop-Triple Ignition Corp., 1765 Broadway, New York.

## SIMONS BODY CLEANER AND POLISH

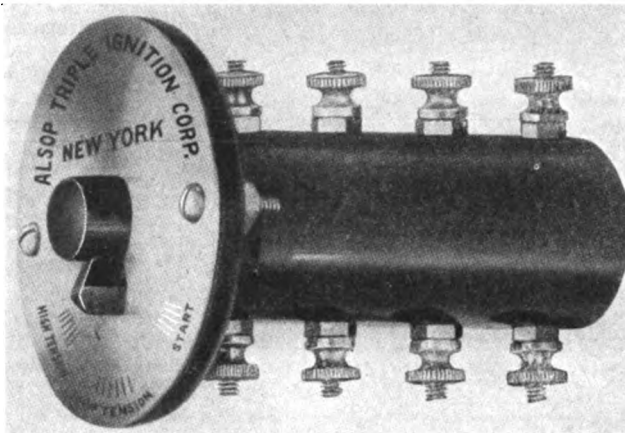
Simons Kleener is a paste cleaner to be rubbed on the body to remove stains, grease and oil. Simons Paste Polish is intended to be applied after the body has been cleaned with the Kleener. It is said to be weatherproof, has a permanent luster, sheds water and does not catch dust. Price, 60 per can, or \$1.20 for one can each of Kleener and Polish.—Simons Mfg. Co., 2121 Michigan Avenue, Chicago.

## WILKINSON VULCANIZER

A two-cavity steam vulcanizer which will care for casings from 30 x 3 in. to 37 x 5 in. Combined with the cavities, there are two inside molds and a tube plate 21 x 4 in. which will cure three tubes at once. Outfit is 3 ft. 5 in. high and occupies a floor space of 26 x 40 in. Complete equipment goes with the vulcanizer, including reducing, shell, bead molds, steam gage, safety valve, burners, building mandrel and bench arm. Price \$155.—Wilkinson Mfg. Co., San Bernardino, Cal.

## BRUNSWICK TIRES

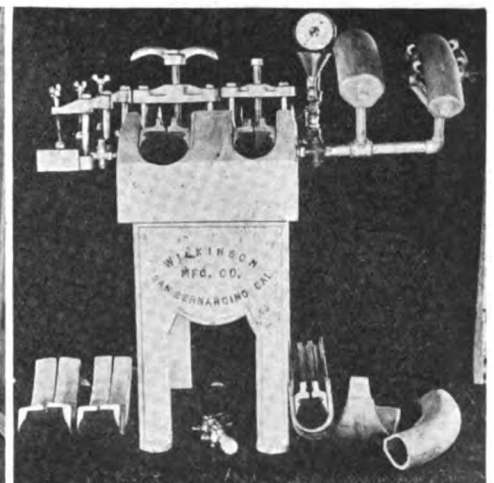
Pneumatic tires made in plain, BRC Skid-Not casings and ribbed tread casings in all sizes from 28 x 3 to 37 x 5 in. at prices ranging from \$14.65 to \$63.30. Gray and red tubes range in price from \$3.30 to \$10. A 30 x 3-3½ combination tube is made for the Ford car to fit on either the front or rear wheel. Price, \$3.65 for the gray and \$4.25 for the red.—Brunswick-Balke-Collender Co., 623 South Wabash Avenue, Chicago.



## ALSOP-ALL-SPARK

An adjustable spark intensifier to be attached to the dash of the car which interposes itself and medlates in the path of the current on the way from the distributor to the spark plugs and

converts the electricity into a higher voltage. The transformation is carried out by a series of small plates of phosphor bronze interposed with insulating material, these acting as condensers and decreasing the



# Lalley-Light Farm Light and Power Plant

**THE** Lalley-Light farm light and power plant, made by the Lalley Electro-Lighting Corp., Detroit, is a complete plant with engine, dynamo and magneto mounted on an iron base and with batteries, switchboard, fuel tank, water tank and other accessories all ready for use when set up. The capacity of the plant is 1000 watts from the generator alone, and the battery has a capacity of 115 ampere-hours. The system operates at 30 volts.

The engine and generator are direct-connected, using the same shaft, and are mounted on the same base, the whole outfit being 27 in. long, 14 in. wide and 21 in. high, weighing 322 lb.

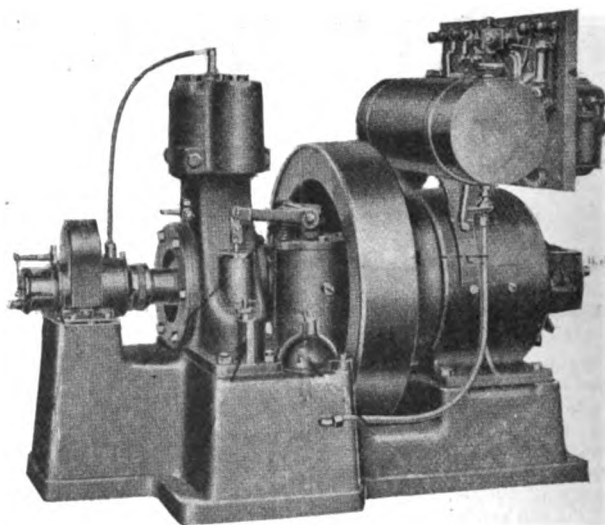
## Engine

The engine is a 2-cycle, high-speed machine,  $2\frac{1}{2}$  in. bore, 2 in. stroke, speed 1800 r.p.m., developing  $1\frac{1}{2}$  hp. Cooling is by water contained in a tank and circulated on the thermo syphon principle. Connections from the tank to the engine waterjackets are with rubber hose. The piston has four lap-joint piston rings and unusual means are provided to prevent the escape of crankcase compression around the crankshaft bearings. A compression ring is used on one end and two phosphor bronze bushings on the other.

The flywheel is keyed to the shaft and the integral fan blades in the wheel keep the generator cool. The engine is completely equipped with ball bearings, the two on the crankshaft and one on the big end of the connecting rod being large size Conrad ball bearings.

The carbureter is of float feed type and is cast integral with the base of the engine. The single adjustment is secured by a locknut. Ignition is furnished by a Berling magneto, which is

*The Lalley-Light system is a complete plant in which the generator is direct-connected to the engine. The switchboard is mounted on the same base as the rest of the equipment*



direct-connected to the crankshaft with a flexible coupling. The spark plug threads are S. A. E.

A centrifugal governor running in an oil bath acts through a rocker arm directly on the balanced plunger throttle. Crankshaft, crank bearings and governor are lubricated by mixing oil with the gasoline; governor and crankshaft bearings run in oil supplied through a spring oiler; generator is oiled periodically at one point and magneto at two points.

The gasoline tank has a capacity of 1 gal., but a larger tank can be supplied if state insurance laws allow.

## Electrical Units

Willard storage batteries with extra thick plates are used. Glass or rubber jars are optional. The capacity is 115 ampere hours and there are 16 cells.

The generator is so arranged that it also acts as an engine starter, so that by turning a switch the plant starts up, current from the battery being used. When the battery is fully charged the engine is automatically stopped. When current is used direct from the generator it does not pass through the battery first.

The switchboard has a switch to start the engine, an ampere-hour meter, an automatic engine stop and a bell that rings when the battery is discharged. An automatic cutout disconnects the battery from the generator if for any reason the engine stops or is not running properly.

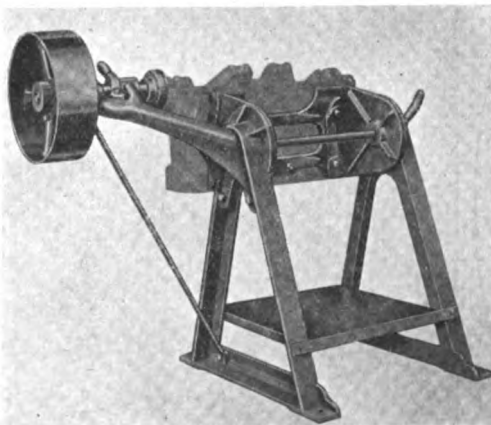
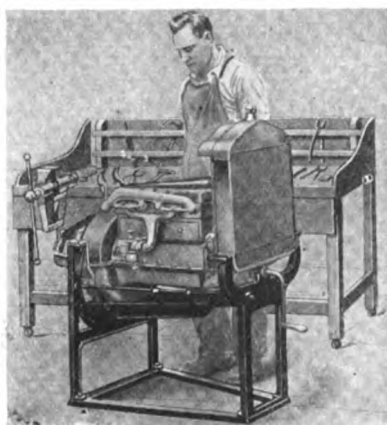
The complete outfit sells for \$455 if rubber jars are desired, or \$475 with glass jars, f.o.b. Detroit. An allowance of \$10 covers freight and handling to New York, Newark or Boston.

## ECO FORD ENGINE STAND

A Ford engine stand which will hold the engine at any angle, movement being possible by loosening a handle and revolving the whole top to the desired position. The legs are provided with holes at the bottom for bolting down either to the

floor or to 3 x 4 in. timbers to which castors can be attached, making the stand portable. Made of gray iron castings braced with steel angles and fitted with a tool shelf at the bottom. Finished in oil-proof enamel and shipped in a crate. A power attachment, consisting of an arm

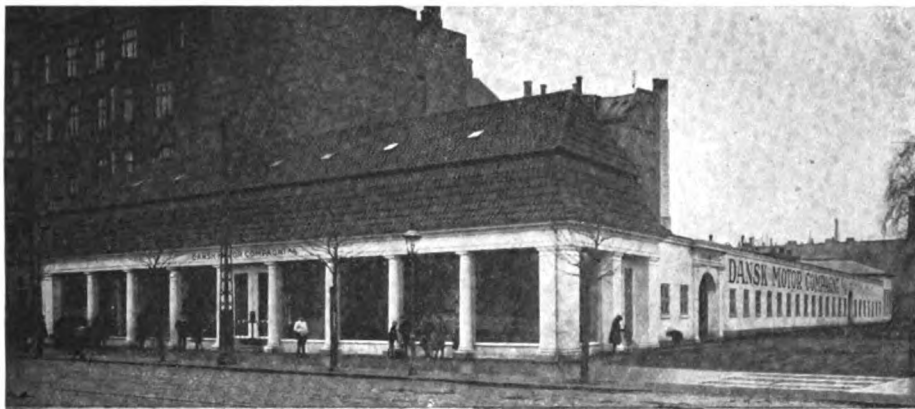
and a pulley and shaft can be fitted to the stand for burning in bearings, running in pistons, etc. Price of stand, only \$20; power attachment, without the stand, is \$15; the price of the stand and attachment together, \$35.—Western Mfg. Co., Oskaloosa, Iowa.



## ECO TWO-IN-ONE SERVICE STAND

A service stand for the Ford power plant or the entire rear axle assembly. When used as an engine stand it forms a support for the engine, gearset and radiator so that the engine may be run under its own power. A tool shelf and grease pan are beneath the engine. The stand also holds the entire rear axle unit together with brake rods, etc., so that any part can be removed and the stand will hold the remaining members in their proper position. The illustration to the left shows the two-in-one service stand being used as an engine stand and the engine and radiator are shown mounted on it. The three quick-acting clamps come in exactly the same positions as the engine supports on the Ford car. The stand can be fitted with castors so that it can be moved about. Price, \$27.50.—Western Mfg. Co., Oskaloosa, Iowa.

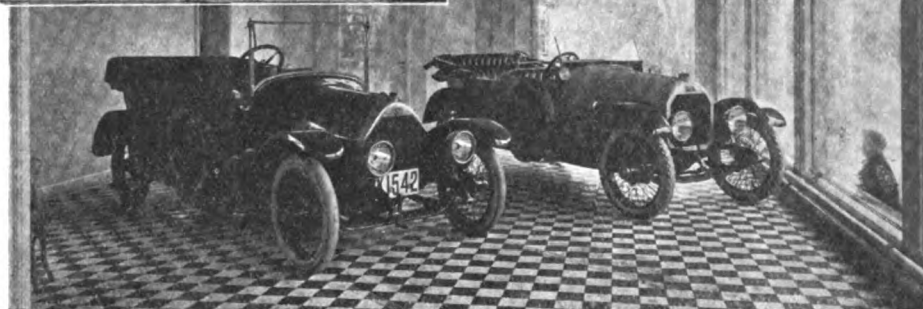
# News and Views From a European Country That Hasn't Gone to War Yet



These Scenes from Denmark's Capital Look Like Peace and Plenty

ABOVE—The Dansk Motor's building wouldn't look bad on an American Motor Row

RIGHT—And the interior of the sales-room is hard to beat on Broadway



Kopenhagen, 12 Juni, 1918

Editor Motor World: Enclosed we are pleased to hand you some photos showing interiors and exteriors of our newly built automobile establishment, the erection of which has just been completed.

Our concern is the largest of its kind in Scandinavia, being exclusively built for automobiles, and consists of a modern showroom, offices, garages and workshops. The showroom has 12 very large show windows and an area of about 6000 sq. ft.

The showroom faces the main thoroughfare in Copenhagen, viz., Strandvej, which is most frequented by motor cars, and is in every respect elegantly and splendidly gotten up. Our modern offices are behind the showroom, and further back are the garages, all of which are provided with water, central heating and electric light. At the far end of the plant are machine shops, workshops for saddlery, painting, coachbuilding, etc., all being furnished with modern machines,

which enable our establishment to give exceptional service.

Filling with petrol, or gasoline, and oil is done by means of automatic pressure tanks, the tires are pumped with automatic pumps, owners' cars are delivered and brought back by the establishment's regular chauffeurs and all these and other conveniences give to the whole establishment a first-rate character.—Dansk Motor Compagni, Aktieselskab, Axel Vicking, Copenhagen, Denmark.



All around this enclosure are small private garages, each of which is equipped with water, light and heat and all the comforts of home. At the far end is the workshop. The enclosure is in the center of the building. If you walk out the back door of this sales-room you get the view about as shown here

# Vulcan Building a Convertible Plow for One to Three Bottoms

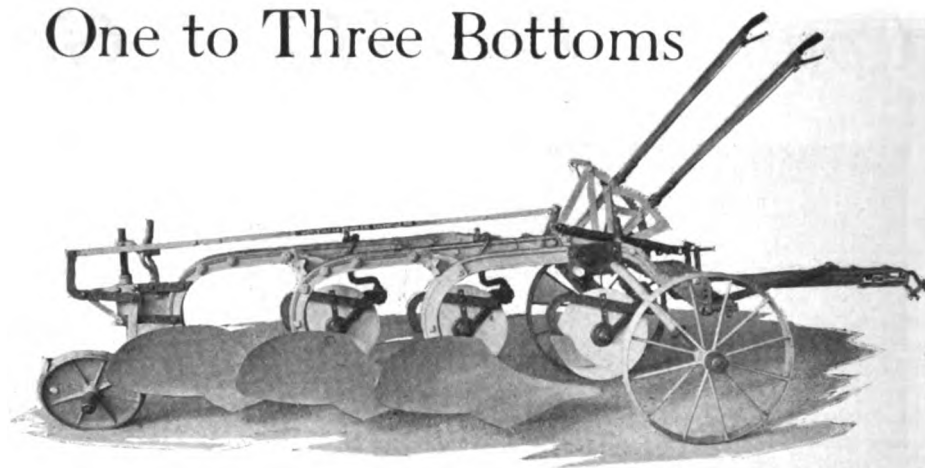
*Gangs May Be 12, 14 or 16 In. and Each Bottom and Beam Is a Unit and May Be Reduced by Removing a Few Bolts*

THE problem of adapting the size of the plow and the width of the furrow to soil conditions in order to keep within the power capacity of the tractor has been met by the Vulcan Plow Co., Evansville, Ind., by building a plow which may be converted into a one, two or three-bottom size, and which will plow 12, 14 or 16 in.

Each bottom and beam is a unit. The two-bottom gang may be reduced to one bottom by taking out a few bolts and removing the second beam. A few necessary accessory parts are added and a one-bottom engine plow with power lifting device is left. Similarly the two-bottom gang may be converted into a three-bottom gang by the addition of a third bottom and beam.

By taking advantage of this the farmer can adapt the number of bottoms he can pull to the power of his tractor and the condition of the soil. It is a known fact that a tractor which readily can pull three bottoms in soil of one kind can handle no more than two in soil which has a different character or where grades are heavy. The facility with which the Vulcan plow can be changed from one to two or three bottoms is an advantage.

The Vulcan plow also is built with an



*Vulcan Engine Gang Plow with the three bottoms in place. The plow as shown with the three bottoms in place weighs 1070 lb.*

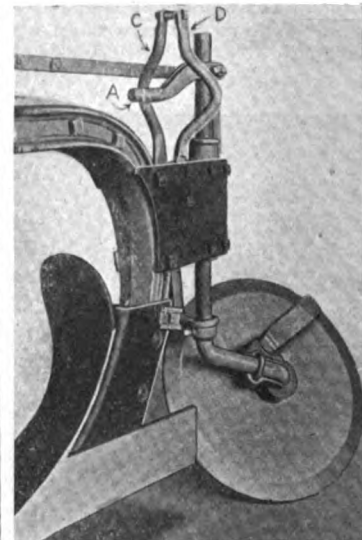
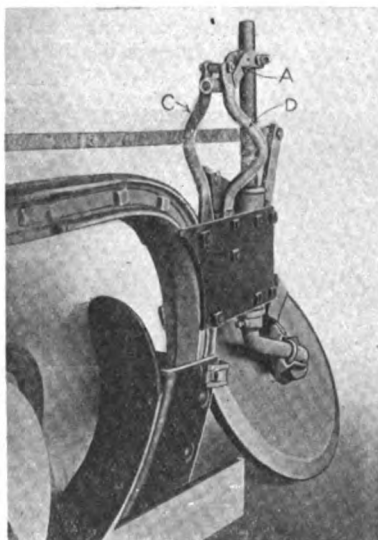
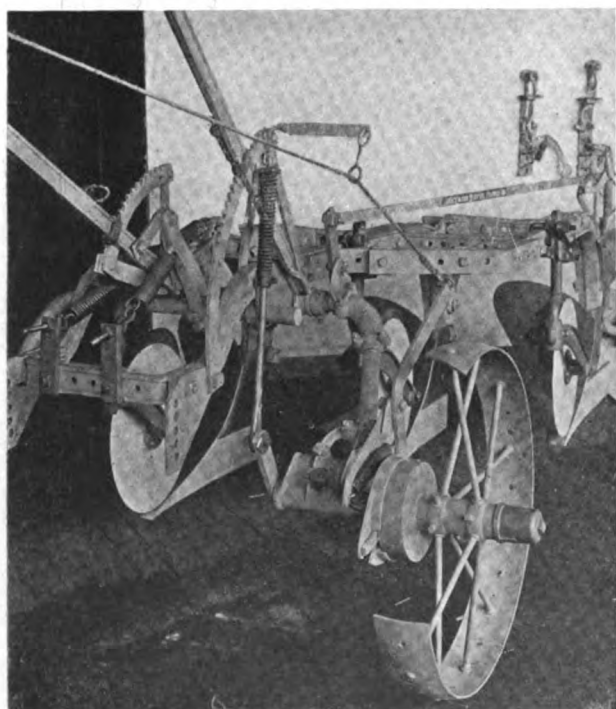
adjustable frame, an exclusive feature, which enables the operator to space his beams so that the bottoms will cut 12, 14 or 16 in. to a furrow. This is accomplished by removing the bolts which hold the braces connecting the beams and sliding the braces in or out, extra holes being provided for the new locations of the bolts.

Two advantages result from this feature. The width of furrow slice may be varied to conform to soil conditions and to co-ordinate the plow draft to the power of the tractor. Also by widening the cut of the bottoms to 16 in. a three-bottom Vulcan plow, whenever it can be pulled with the tractor, will plow one acre more per day than it will when the beams are spaced to cut but 14 in. The plows, when they leave the factory, carry 14-in. bottoms as standard equipment, and the beams are spaced for a 14-in. cut.

The Vulcan plow is a one-man outfit, as the control levers point forward to within easy reach of the tractor operator. These levers are two in number, one controlling the depth of the furrow and the other leveling the bottoms so that all the furrows are uniform.

The power lift is simple and positive in action. It operates directly on the axle of the land wheel and is tripped with a jerk rope. When engaged it will raise the plows in one-half revolution of the land wheel. This gives a response so rapid that the bottoms come out of the ground quickly and leave a clean cut furrow end. The lift also operates to press the bottoms into the ground when a turn has been made and a new furrow is to be opened.

In raising the plows the lift pushes down on the axle of the land wheel and at the same time the axles of the furrow



*Left—A front view of the Vulcan Engine Gang Plow with a section of the rim removed to show the inclosed bearing. Above—The rear or castor wheel which cannot castor and block the plow when backing*



and rear wheels are pushed down, thus raising the bottoms high and level. Regular equipment includes lugs for the land wheel to prevent slipping and to make lifting action positive.

The Vulcan plow has an adjustable hitch which can be adapted to any tractor. It hitches low on the plow and high on the tractor, and is so braced that the tractor and plow may be backed when necessary.

The rear, or castor wheel, is so controlled that it cannot castor and block the plow when backing. The crank A on the upper end of the rear axle controls the position of the rear wheel. The left view shows the crank A held securely in the narrow slot between the upper ends of the curved guides C and D. The rear wheel thereby is held securely in the corner of the furrow and cannot swing to the right or left when backing. The right view shows the rear wheel after the power lift has raised the plows at the end of the furrow. The crank A has moved down into the wide space between the curved guides and the rear wheel is free to castor in making the turn on the unplowed ground.

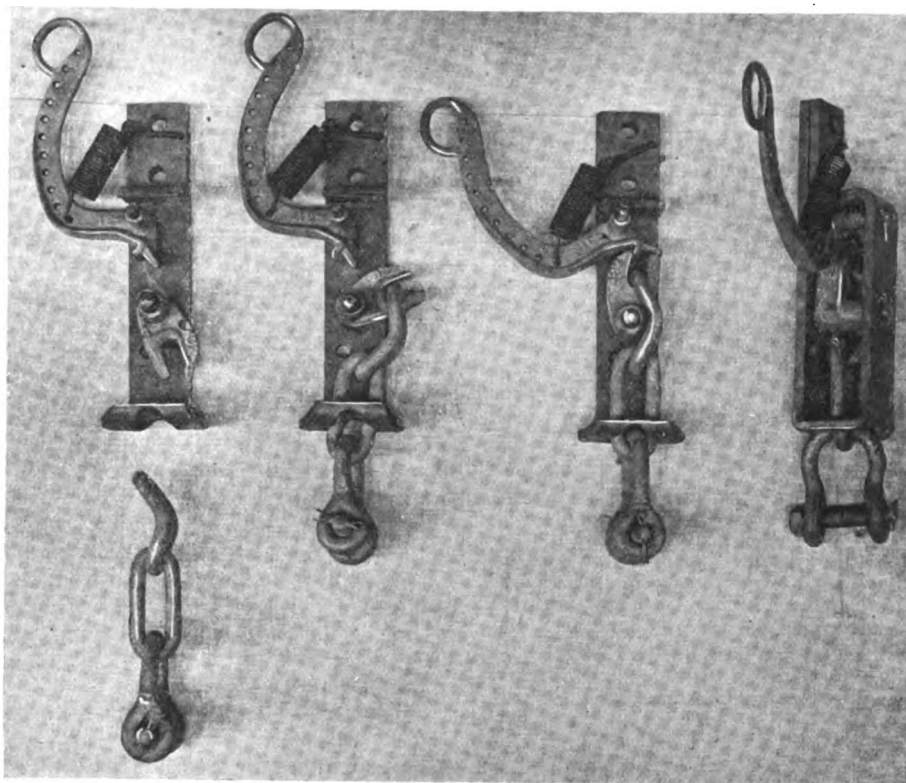
Regular equipment includes the combination rolling coulter and jointer. The jointer blade is reversible and cuts a slice from the outside edge of the furrow 1½ in. deep and 4 in. wide, throwing it into the lower right-hand corner of the open furrow. The purpose of this is to cover weeds and trash.

A unique feature is the spring trip release on the hitch, which takes the place of the commonly used break pin. The illustrations show the hitch complete and ready to be bolted to the draft-bar. The second illustration shows the same with the top removed to show the position of the lever, the knuckle and the shackle chain. When the plow strikes an obstruction the hitch releases automatically, as shown in the third illustration, while the fourth shows the hitch after the tractor has moved forward from the obstructed plow.

The weight of the Vulcan plow is as follows: One-bottom, 570 lb.; two-bottom, 800 lb.; three-bottom, 1070 lb. The company has had long experience in building plows and is most particular respecting workmanship and material.

#### No Gasoline Profiteering in Bay State

BOSTON, July 27—There will be no profiteering in gasoline in Massachusetts as a result of the raise of ½ cent a gallon allowed the oil companies by the United States Government. Fuel Administrator James J. Storrow, who has direct charge of all such matters throughout the State, received word that some of the retailers had boosted the price a few cents following the raise by the oil companies. So he has issued a statement requesting that all motorists or others who come across instances where retailers have advanced the price more than ½ cent notify him at once, and he will stop the practice. Under the powers granted him by the State and National



*The adjustable hitch used on the Vulcan Engine Gang Plow, showing the spring trip release clevis. The stages of tripping are from the left view where the hitch is closed to the right where the hitch is open and the link is pulled out*

government he may revoke the license of any such dealer to do business in Massachusetts, either for a few weeks or during the period of the war. And as examples have been made of other profiteers in sugar, flour, and such commodities, the gasoline profiteer will meet the same fate. So it is up to the motorists to act instead of kicking among themselves when they are overcharged.

#### Bellevue Organization Formed

BELLEVUE, OHIO, July 27—About 15 dealers and garage owners met July 23 to organize the Bellevue Automobile Trade Association. Every dealer in the city was present with the exception of two who sent proxies. Louis Jacobs was elected president; C. B. Royer, vice-president, and George Klein, secretary-treasurer. Steps were taken to affiliate with the Ohio Automobile Trade Association. A resolution was adopted to close all garages on Sundays and holidays. Two of the garages also handle implements, but no exception was made in their cases.

#### Developing Motor-Truck Routes

WASHINGTON, July 27—Arrangements have been made whereby rural motor-truck operators can co-operate with the Bureau of Markets in developing rural truck routes for farm products. Operators of truck routes who comply with certain requirements of the bureau will receive assistance in building up

business in farm produce, and will be given a sign to display on their machines stating that they are co-operating with the Department of Agriculture. Truck operators can get details of the plan by writing to the Bureau of Markets, Washington, D. C.

#### Clyde Dealers Organize

CLYDE, OHIO, July 27—The Clyde Automobile Trade Association was organized at a meeting of dealers, repairmen and garage owners held July 24. Victor Moon, manager of the Ohio Automobile Trade Association, was present to give pointers in the organization. The organization will affiliate with the State organization. Officers elected were: I. J. Jordon, president, and I. C. Weidle, secretary-treasurer. A strong resolution was adopted to close all dealers, garages and repairshops on Sundays and holidays.

#### Wyandotte Bands Together

UPPER SANDUSKY, OHIO, July 27—An enthusiastic meeting of dealers and garagemen was held here July 22 when the Wyandotte County Automobile Trade Association was organized with a membership of more than a score. Practically every dealer and repairman in the county attended. W. J. Dupont was elected president; William H. Phelps, vice-president; J. B. Johnson, secretary, and Charles H. Johnson, treasurer. All of the officers except the vice-president are from Upper Sandusky. Phelps hails from Carey.

### More N. A. D. A. News

(Continued from page 15)

servation movement, and asking that they co-ordinate their efforts.

The oil chiefs were informed that the automobile committee had acted toward conservation by all stations upon information obtained from official public announcements that there was necessity of conservation of gasoline. At this

writing word from the oil chiefs is being awaited.

### Vesper Sees Oil Men

NEW YORK, July 29—President F. W. A. Vesper, of the National Automobile Dealers' Association, to-day conferred with the officials of the Standard Oil Co. The oil men stated they were operating under the Petroleum Board.

Vesper will report the situation to Chairman A. W. Shaw of the Commercial Economy Board of the Council of National Defense, under which the N. A. D. A. War Service Committee is operating, with the request that Shaw take the matter up with the head of the proper department at Washington in an effort to secure an adjustment of the situation. In some cities the oil companies have closed.

## Letters That Got N. A. D. A. Members in New England

### Boston Letter No. 1

July 13

We must have your co-operation in keeping taxes on motor vehicles on a fair basis. The Government now proposes a 20 per cent additional tax on new cars and 10 per cent tax on gasoline. Such a tax would probably demoralize your business and ours.

When we stop to realize that the motor industry is the third largest in the United States, and the number of people it would affect, it makes us all realize the importance of every dealer in the United States—35,000 in all—getting together for their own protection. We are whole-heartedly in favor of fair taxation and every possible patriotic co-operation and conservation that will help our Government win this war. We do object to discriminatory taxation which would spell "ruination to our business." If there was ever an important duty before you to perform it is to become a member of this organization, which, with its great numerical strength, will be a power.

Committees working throughout the United States are giving their time without compensation in forming this organization.

There are many things that we dealers must get together on, not only now but in the future. If you will read every word of the enclosed pamphlet you will learn what this organization has achieved in the past and what it proposes to do in the future. Bear in mind that after this war is over we want the taxes on motor cars reduced or discontinued as quickly as on any other line of merchandise. The factories have endeavored to help us, but the curtailment in production does not affect them as much as it does us, as they have Government orders to work on.

The N. A. D. A. will soon be in a position to point out to you many ways of advantage in reducing your expenses and making many savings in your business during the war, along lines suggested by the Commercial Economy Board of the Council of National Defense at Washington, D. C., which recently asked this association to appoint a standing committee to confer with it on economies in the automobile industry for the duration of the war.

While the \$15 initiation fee and first year's dues are necessary for the success of this organization, it is your personal strength that we require.

If you have read recent copies of the trade journals, particularly the Motor World (page 7 of July 3), you undoubtedly appreciate what the national association has been doing in protecting the dealers' interests. Every agent is in duty bound to become a member for his present and future preservation.

Remember when you sign the enclosed card that the initiation fee will be more than paid back to you many times over in taking care of your interests, by keeping taxes where they belong and endeavoring to improve the shipping facilities, and if you and every

dealer in the United States will immediately become a member and lend your assistance in every way possible, you will properly protect your own and our Government's interests.

Please sign application card and return with check by first mail. Make checks payable to National Automobile Dealers' Association, and forward to the undersigned, 5 Park Square, Boston.

### Boston Letter No. 2

July 19

A few days ago you received a letter and circular from the New England Committee of the National Automobile Dealers' Association. Perhaps you threw it into the waste basket, not realizing its importance. As a matter of fact, it is vitally important to you.

Every dealer's support is necessary to insure proper protection to the motor vehicle business. When you hold back from joining you are committing business suicide. Many dealers believe in letting the other fellow do it. That method would not give us the complete dealers' strength. If you want to protect your business, join this organization at once.

It will be to your advantage to return the application blank quickly because: First—You will receive direct important benefits and confidential information of great value obtainable in no other way. Second—You will become a charter member with its advantages, while it may not be easy to enroll later and it may cost delinquents more.

Our representatives understand the dealer's viewpoint, and can therefore go before the Ways and Means Committee at Washington in such a forceful and intelligent manner as will safeguard us and at the same time be of assistance to our Government.

Every dealer spends many hundreds of dollars for fire, theft, accident and liability insurance as a matter of good business policy, thinking nothing of it. This \$15 initiation fee to the national dealers' association would be the most valuable insurance in his possession, as it insures the successful continuance of his business.

The proposed tax of 20 per cent on new motor vehicles and 10 cents a gallon on gasoline makes it important that you insure your business by signing the enclosed card and application at once. Other important legislative matters will be coming up daily, and we want proper representation in Washington to safeguard the third largest industry in the United States.

Sign and return to-day without fail.

### Boston Letter No. 3

July 22

In these uncertain days you are constantly wondering what developments will occur that will affect your business and your profits.

You speculate on whether or not you can

get cars or whether or not there will be a 10 cent a gallon tax on gasoline and a 20 per cent tax on automobiles.

The more you can definitely learn about what is likely to happen the more intelligently you can conduct your business. Therefore it is of vital importance that you inform yourself as accurately as possible.

F. W. A. Vesper, president of the National Automobile Dealers' Association, will be in Boston Friday, July 26, to talk to you about just these things and to tell you what the national association is doing and what it plans to do to help you and all of us who are engaged in the automobile business.

Mr. Vesper is the best-posted man in the country on these matters, as he has given his entire time to the subject for more than a year.

Decide now that you will let nothing interfere with your being in Boston to hear him.

The meeting and dinner will be at one o'clock at the Hotel Brunswick. This meeting will be over in time for you to see the ball game if you wish.

We suggest that you go direct to the Boston distributor handling your car and from there to the meeting place.

In any event, come. The West and the South have turned out almost to a man to these meetings. New England has the reputation of being conservative—some say slow. Let's show them that when our interests are at stake we can act promptly and stand together for our mutual benefit with the best of them.

Your name is on the list and you will be expected. Be sure and be on hand when this list is checked up. In any event, it is imperative that you mail the accompanying card to-day.

### Boston Letter No. 4

We wrote you recently on a matter that the writer thought very important, namely, joining the National Automobile Dealers' Association. We believed then, and do now, that it is of the utmost importance that dealers organize for their own protection. The writer is in close touch with the work done by the National Automobile Dealers' Association and knows it is efficient.

Up to date, we have not received a reply from you as to whether you have joined this association or are willing to join.

It must be apparent to you that the proposed legislation concerning the automobile industry and taxes, unless counteracted by some intelligent organization which is capable of showing the manufacturers' and dealers' side of this business, will only lead to disaster, and you are voting for disaster unless you are willing to endorse an organization that is fighting for your interest.

Enclosed please find application for membership. Please fill this out and send to us together with \$15 and identify yourself with an organization that is working for you.

## Distributors' Letter

July 16

A day or two ago you received the enclosed letter and circular from the National Automobile Dealers' Association of the United States. Perhaps you threw it in the waste basket—not realizing its importance. As a matter of fact it is vitally important. Therefore I take the liberty of calling your attention to it, and ask you to read it carefully.

Every old-established line of business has a strong national association, and if the automobile dealers were not equally as well organized and represented, it might very easily result in our business being discriminated against in such a way as to cause every dealer in the country the loss of a great deal of money and possibly the loss of his business. If, on the other hand, the men representing the national association go to Washington when necessary, backed up by every real automobile dealer in the country, they will have a power that will result in the automobile business being treated fairly.

At present there is a proposed tax of 20 per cent on automobiles and 10 cents a gallon on gasoline. You certainly want to be in a position to enter an active protest against such a measure, and as a member of the national association you can do so.

After the war is over, taxes will be gradually reduced. You would not want to see this reduction made on taxes paid by other

lines of business before it was made on taxes paid by automobile dealers. The national association, if it includes in its membership practically every dealer in the country, will be able to lay facts before the Government that would lead to our business being treated fairly in this respect.

Membership and dues for the first year are only \$15. Make your check for that amount, payable to the National Automobile Dealers' Association, sign the enclosed application blank and mail in to us. Don't neglect this. Frankly, we are going to keep after you by letters, telephone calls or personal visit until you come across, because we realize the immense importance of this move and because we have guaranteed to the association that every Hudson dealer in our territory would also realize its importance and would enroll.

Send check by return mail and help us clean up our job quickly.

## Distributors' Letter

July 17

Before reading this letter, we want you to let this fact sink deep—this is a personal appeal from your distributor, and the fact that we are spending time and money to do this work for the National Automobile Dealers' Association should be sufficient proof to you to show its very great importance.

We are enclosing a copy of letter received from the National Automobile Dealers' Asso-

ciation of the United States. This letter has been sent out from the New England Membership Committee asking you for co-operation in keeping the taxes down on motor vehicles and assisting in other propaganda of this kind.

There is just one way that you can assist and that is to become a member of the National Automobile Dealers' Association. The initiation fee is \$15 for the first year's dues.

It is man-power that is needed to put over proper legislation at Washington and the different state capitals to protect the automobile dealers' interests throughout the United States. This means protecting your interests. Mechanics have a union. Manufacturers have an association of their own. The dealers are squeezed in between and they must get out and fight if they want to make a success of their business. Now, \$15 a year will help you to make a success of your business and will help every other dealer make a success of his business. Aren't you willing to give it? If so, send your check to this office and we will take care of your membership for you and send you the application blanks, certificates, etc.

This is the most important stroke of business that you have done or will be able to do for many a day. Do it right now—this minute. Don't neglect it! Your immediate answer, yes or no, will be considered not only in a business, but in a personal light.

## How the N. A. D. A. Suggests That a Territory Organize

- 1—Name a Central Committee in the distributing center.
- 2—Select a County Chairman in each county—the livest man.
- 3—Notify him by letter and ask him to get started. (Letter and instructions to him are printed herewith.)
- 4—Distributors write their dealers. (Letter shown herewith.)
- 5—County chairman writes to dealers in county. (Letter shown herewith.)

### Letters to County Chairman

"This is to notify you that you have to-day been appointed a special committee in charge of the National Automobile Dealers' Association membership campaign in your county.

"The Kansas City Motor Car Dealers' Association is held responsible for the campaign in this district, and we are anxious to make a record that will stand comparison in any part of the United States.

"We feel that the committee we have named as shown above (on letter-head) will respond to the call, and that you will make a splendid return.

"The automobile dealers of the nation are facing a crisis in their business affairs to-day, as you know. The only way in which we can safeguard the future of our business is through the medium of a large and influential National Automobile Dealers' Association.

"It is vitally important that every county dealer be invited to join the national association. The membership fee is merely nominal, so that the expense can be no drawback.

"The national association has been doing a great deal of constructive work,

and we feel that it is the duty of every dealer in the Kansas City trade territory to become a member of the national association. With this large increased membership we will have a far greater influence in national affairs than we have had up to date.

"We desire to bring the membership in the national association up to 5000 by Aug. 1 of this year. If we do this we can go before legislative bodies in state and national centers with the assurance that we are being backed up by the automobile dealers of the United States.

"If you believe in your business, you believe in the national association.

"With this letter we are sending a copy of instructions (printed elsewhere) together with a form letter, which it is suggested you get out to the dealers in your county.

"Read the enclosed instructions and then consult with the members of your committee and start active solicitation immediately. Mail your applications daily to the Kansas City office.

"The national campaign is being conducted under the jurisdiction of E. E. Peake of Kansas City, who was recently elected executive secretary of the national association. It is a great big job

and your part of it, though requiring but a small amount of time and effort, is very important.

"Please respond by return mail accepting this appointment and telling us how many application blanks you will need and what other literature you desire. If there is any information you desire, get in communication with this office immediately and it will be forwarded to you.

"With the few dealers in your county to be seen it should be but a short while before you can report on every dealer.

"We are sending partial list of dealers in your county. No doubt this is somewhat altered by now, but you will be familiar with the names of all those who are dealers and be sure to extend to them an invitation to become a member of the national association.

"NOTE—All supplies are being sent to the chairman, and he should call committee together."

In case the dealer did not respond promptly he was followed up with another letter. With hardly an exception the dealers, being addressed by distributors whom they knew well, were glad to take charge of the work and began to send in the memberships

To supplement the work of the county committees each Kansas City distributor sent to all his dealers the following letter:

### From the Distributer

"The automobile dealers of the nation at the present time are at a crisis in their business affairs. We feel that it is necessary to build up the strongest national organization possible, for the reason that it will be possible only through a strong national organization to properly safeguard the future of our industry.

"It is of vital importance to you that the national association membership be recruited up to at least 5000 members by Aug. 1.

"The work the national association is doing is in protection and the furtherance of our interests, and consequently is vital to our welfare. For that reason we feel that you should be a member.

"A committee in charge of memberships has been appointed in your county. This committee will get in touch with you, and we feel that you should without hesitation immediately sign the application blank when it is presented. The dues are only \$10 a year and the initiation fee is but \$5, so that the expense of the membership is very small.

"We expect our sub-dealers to make a 100 per cent return in this campaign."

From time to time the chairman of the central membership committee in Kansas City writes to the distributors telling them of the progress of the campaign and making suggestions as to how they can further co-operate. In case the dealers in any one line don't seem to be responding that distributor is requested to ascertain the difficulty.

With the letter that is sent to the county committee, announcing its appointment and requesting co-operation, is sent a sheet of instructions as to how the committee can secure best results. These instructions—which are mentioned in the letter printed above—follow:

### Instructions to Chairmen of County Committees

1—See that your local paper carries news item concerning the campaign of the National Automobile Dealers' Association for more members and announces your appointment as chairman of your county committee.

2—Write a letter to every dealer in the county announcing the appointment of this committee enclosing a copy of the circular, "Reasons Why," of the National Automobile Dealers' Association. Your letter should state that the dealers will be called upon by your committee and that they should be prepared to sign the application blank immediately. Some suggestions for such a letter are contained in the form letter which is sent to you in this envelope (printed below).

3—Confer with other members of your committee, and if deemed advisable apportion the names of the dealers to be solicited for membership among the members of your committee. Then see to it that every dealer in your county is solicited and becomes a member of the national association.

4—See that application blanks are fully and properly made out.

5—See that check for \$15 accompanies the application blank.

6—Be sure to invite every dealer in your county to become a member of the national association. This is of vital importance to you and your business. In strength of numbers only lies the power of the national organization to protect your business. This is a critical time and *everybody* must put his shoulder to the wheel.

7—Any additional supplies or information and any help in this work will be gladly furnished you by the Central National Association Membership Committee in your district. Return all signed applications together with checks direct to the Central Committee in your district. See your prospects immediately for prompt action.

8—Report on every dealer in the county. If there is one who will not join, tell the reason why. Make this report to your Central Committee.

9—Every dealer in the United States should be extended an invitation to become a member of the national association.

10—Get busy in your county immediately after you are notified of your appointment. A time limit has been set on this campaign and your report must be made within that time. Do not wait for the time limit to expire, however; see your men and report immediately. *The national association needs your membership and it needs the membership of every dealer in your county if the organization is to wield the influence it should have in its effort to protect your business at this critical time.*

### Suggestions for Letter by County Chairman

As an automobile dealer you know that we are facing a crisis in our business today. There is no question but that the

combined influence of all the automobile dealers in the United States will carry a great deal of weight in any matters of legislation and regulation that may come up.

I have been named chairman of the County Committee to secure additional members for the National Automobile Dealers' Association. This organization is exclusively devoted to protecting your business and my business, and this is the time when every dealer should put his shoulder to the wheel if he is to properly safeguard his own interests.

This is the time when strength of numbers counts, and as the cost is really insignificant, being a total of \$15—\$5 initiation fee and \$10 dues for the first year—I feel that every dealer in this county should sign up.

I am enclosing you a pamphlet showing some of the things the national association has done and some "Reasons Why" you should be a member. Our committee will call on you very soon with the application blank, and I feel sure we can count on you.

President Vesper says: "This association needs *your* membership to help it safeguard your business."

### What Is Doing Here and There

The N. A. D. A. war service conservation recommendations are being adopted in many cities. Occasionally there is a locality where the garagemen and filling station operators decline to co-operate, and President Vesper has issued a statement covering that situation, which appears elsewhere.

Albany, N. Y., dealers are sending to customers a notice about the adoption of the conservation recommendations.

The Automobile Dealers' Division of the Madison, Wis., Association of Commerce is sending out an 8 x 10 in. sheet to customers, stating the new rules that are being made effective.



*The Pennsylvania Rubber & Supply Co., Toledo, believes in concentrating on one line of goods in a window display. This window was trimmed by Mr. Sims, and is devoted entirely to Mosler spark plugs*



# Salina Tractor Tests Give Dealers a Slant

*There Are Tractors That Are Good and Some That Are Bad—Distributors Numerous and Demand Big Territories—Production Not Big Enough to Supply All the Dealer Needs*

By David Beecroft

SALINA, KAN., July 29—Special Telegram—The forty tractor makers who are exhibiting and demonstrating at the National Tractor Demonstrations here all this week are giving the motor car dealers a better opportunity to get a line on the different machines than has ever been afforded before.

For the first time the tractors are being given real tests in fuel economy and also in horsepower and pulling capacity. While the tests are optional, already thirty-two different tractor makers have taken them. The official results of these tests have not yet been given out but most of them will be made public in the next week or so.

Motor car dealers are here in greatly increased numbers and are seeking large territory for distribution. There are some distributors who are ready to take entire states, some of them having over 100 dealers in their organizations.

## Tractors Hard to Get

While the output of tractors is much ahead of last year, there is a shortage with nearly all firms, and many dealers are finding it difficult to get tractors in sufficient quantities to serve such large organizations.

The tractor field tests have generally proved that the majority of tractors are over-rated, the situation being parallel to that of ten years ago when motor trucks were over-rated.

Dealers are more generally recognizing that tractors sell best on merits of design and performance than on horsepower ratings.

Henry Ford is present in person and has on the streets of Salina 284 Fordson tractors ready for delivery to farmers in Kansas. All of these are already sold and paid for. The distribution of them is through Hudkins, the local Ford distributor.

This array of tractors is one of the big topics of the demonstration, and many never before realized the production capacity that Ford has, this number but representing two days' output from the factory.

A new feature has been put into the present demonstrations by the Parrett Tractor Co., which several days ago started one of its machines on a 100-hr. non-engine-stop run, the tractor plowing in a large 80-acre field outside of the city. The machine has been working night and day since the start and is due

## NEXT WEEK

*Motor World will publish a complete, illustrated article covering every detail of the National Tractor Demonstrations.*

## WATCH FOR IT

to finish to-morrow. It has been working at night with two gas lights, one shining ahead on the furrow and the other pointing to the rear over the plow.

Since its start there has been but one engine stop, and that at the end of 53 hours to clean one-half inch of dirt out of the sediment chamber in the kerosene feed line. The tractor has been using kerosene all of the time, and is averaging with its three plows a little over one acre per hour.

The kerosene consumption is so far 2 gallons per acre. Every aspect of the test is official, with observations, and every hour of the 24 the kerosene is measured, as are the oil and water. The length of every stop to clean the plows or take on fuel is noted. This is the first real, official endurance tractor test of this nature ever made, and without doubt there will be many of such tests next year.

There are several new tractor models on hand but very few new firms. Since a year ago several changes have been made by not a few of the old-established concerns. The Fordson is here for its first demonstration, and it has been taking all of the drawbar and belt tests.

Case is on hand with three new models, none of which has been seen at a demonstration before, but all of which are in production. This new line covers the gamut pretty well with a 10-18 for two plows and a 15-27-ft. for three plows, and in light soil four; and the 20-36 bar for four or five plows.

All use the engine mounted crosswise and drive through a live rear axle so that every part of that is enclosed. A very new model is a horizontal four-cylinder design in which the cylinders lie parallel as the fingers on the hand, with the crankcase at one end.

Some of the other new tractors are Liberty, Wisconsin, Peoria, Frick, Uncle Sam, Yankee, a small Aultman-Taylor, a new Rumely and the Port Huron. The Holt, which has been at all previous demonstrations, is not on hand.

One of the greatest requirements for tractors is the air cleaner or air washer. It is recognized that every tractor must have one. Several new designs have been brought out in the last year, such firms as Case having a design of their own.

Electric starting is not much in evidence, excepting on the new four-cylinder, two-wheel Moline, which has a complete electric system and carries a special Willard tractor battery. The Lausen has a combination compressed air and gasoline starter.

The feeling is very general that next year there will be many starters. Where a starter will conserve fuel it is looked upon as a desirable feature. Several of the tractor engines are now made with brackets for starting motors and lighting generators. Many of the tractors show improvement over last year, but with the demands so great it is not surprising that many concerns are willing to go ahead with production of present models rather than bring out new ones.

The use of cut gears is much more general but there are still a dozen or more of builders who have not awakened to the necessity of using them.

There are some new designs of gearsets in which every gear is a cut gear and every gearset shaft is carried on roller or ball bearings. It is only within the last year that such progress in standard parts has been made.

## Shortage of Parts

There is still a shortage of good parts for tractors such as you can buy for motor cars or motor trucks. One can secure many makes of good engines but very few gearsets, very few steering gears, very few front axles and very few wheels and other parts. As a result, many of the newer models brought out by new concerns display the so-called American ingenuity rather than good engineering.

There is yet too much blacksmith shop work with many of this class of concerns, and these designs are going to bring a rebuff on the tractor field just as similarly poor designs affected the truck field 8 or 10 years ago. There are

8 or 10 tractors here that are very poorly designed. They are more built up than designed. The parts are exposed to dust, there are not enough grease cups and parts are too heavy.

The greatest progress in the last year has been with well-established concerns bringing out new models rather than with several of the poorer designs improving their jobs as it was expected they would. Very much yet remains to be done. There are several makes that it will be much better for dealers to keep away from entirely.

#### Bound Brook Insures Employees

BOUND BROOK, N. J., July 29—The Bound Brook Oil-less Bearing Co. has perfected arrangements whereby every employee who has been in the service of the company for 3 months is insured to the amount of \$500, increasing with the length of service, payable at his death to whomever he may direct, the policy to be issued. The entire expense of the policy is paid by the company. The insurance will apply to the employees of the company's three plants: Plant No. 1 at Bound Brook, N. J., and Plants No. 2 and No. 3 at Lincoln, N. J.

#### Recruiting Unskilled Labor

WASHINGTON, July 29—On Aug. 1 the United States Employment Service will begin recruiting unskilled labor for employers engaged in war work who have filed orders for workers with the state directors of the Service prior to July 30. The total demand of these orders will be ascertained this week and divided among the states on a quota basis. State quotas will be announced Aug. 1. Orders received from employers after Aug. 1 will be compiled and quotas announced Aug. 15. Additional quotas will be based on the same proportionate and announced from time to time as unskilled labor demands develop.

#### Scrap Metal Prices

Following are the prices paid for scrap metals by New York dealers during the past week. They are from *Iron Age*:

	Cents Per lb.
Copper, heavy and crucible.....	23.50
Copper, heavy and wire.....	22.50
Copper, light and bottoms.....	20.50
Brass, heavy.....	14.75 to 15.00
Brass, light.....	11.00 to 11.50
Heavy machine composition.....	23.00 to 23.50
No. 1 yellow brass turnings.....	13.00 to 14.00
No. 1 red brass or composition turnings.....	21.00 to 22.00
Lead, heavy.....	7.00
Lead, tea.....	5.25
Zinc.....	5.75

The prices paid for scrap rubber follow:

	Cents per lb.
Automobile tires.....	5 1/4 to 5 3/4
Inner tubes, No. 1.....	21 to 22
Inner tubes, No. 2.....	10 1/2 to 11

#### Bids For Class A Trucks

WASHINGTON, July 29—Bids for the manufacture of Class A trucks will be opened at 11 a. m., Monday, Aug. 5, by the Motor Transport Service. Bids were requested for the manufacture of 5000.

## World's Records for De Palma at Chicago

### Packard Pilot Sets up New Marks for 10 and 20 Miles—Chevrolet Runner-up

Two-Mile.		
Driver and Car	Time	M.P.H.
Resta, Special.....	1:18.0	92.3
Chevrolet, Frontenac.....	1:18.4	91.7
DePalma, Packard.....	1:19.0	91.1
Mulford, Frontenac.....	1:20.0	90.0
Vail, Hudson.....	1:42.0	74.2
Ten-Mile		
DePalma, Packard.....	5:24.8	110.8
Chevrolet, Frontenac.....	5:25.0	110.7
Resta, Special.....	5:26.0	110.4
Mulford, Frontenac.....	5:26.2	110.3
Twenty-Mile		
DePalma, Packard.....	10:50.2	110.7
Resta, Special.....	10:51.6	110.4
Mulford, Frontenac.....	10:52.0	110.04
Chevrolet, Frontenac.....	10:52	110.03
Thirty-Mile		
DePalma, Packard.....	16:54.8	106.42
Chevrolet, Frontenac.....	16:55.8	106.30

CHICAGO SPEEDWAY, July 28—Ralph De Palma in a series of spectacular races here to-day took first place, incidentally breaking two world's records.

All the races were hotly contested, with the lead alternating between De Palma and Chevrolet, who drove a Frontenac with its usual steady gait.

Resta got his car going well in the first race and took the 2-mile event in 1:18 or at 92 m.p.h., the slow time being accounted for by the standing start. Duray broke the rear axle shaft of his Frontenac a few seconds after the field got under way, scarcely having moved 100 ft. from the starting line.

The 50-mile race was abandoned after three laps had been run, on account of rain.

When the smoke of battle had finally cleared, De Palma had 22 points safely tucked away, Chevrolet 18, Resta 15, Mulford 10 and Vail 2.

All the races except the 2-mile were from flying starts. In the first race Resta was followed closely by Chevrolet, De Palma, Mulford and Vail in the rear, who was suffering from ignition trouble.

In the 10-mile race Vail had the pole and after the field had got under way Resta came trailing around with plug trouble before he had crossed the tape and the field was again started.

It was a duel between Chevrolet and De Palma, the latter winning at the speed of 111 m.p.h. in the 20-mile. The four cars, Vail having retired with ignition trouble, were bunched most of the time with the lead held principally by De Palma. Chevrolet, Resta and Mulford were serious contenders but on the last lap the big Packard was shot over the tape with another record to its credit.

Under a threatening sky the four cars lined up for the 30-mile race with Resta at the pole. De Palma set such a terrific pace that Resta was forced to his pit

where diagnosis of his trouble indicated a burned out connecting rod bearing.

This left De Palma and Chevrolet sole contenders. So closely were they matched that when starter Wagner finally waved the checkered flag, De Palma crossed the tape but one second ahead of Chevrolet. Earlier in the race Mulford came to the pit with a plugged oil line.

Just before the race started De Palma's car got afire at the pits but quick work put out the fire. Mulford drove his first Sunday race and although he kept well bunched with the leaders, his Frontenac did not possess quite enough speed to capture any of the events.

Vail showed up for the 50-mile race after having done considerable adjusting and ran well with the field up to the time the race was flagged.

Officials of the speedway estimated from 15,000 to 18,000 people scattered about the paddock, grandstand and bleachers, and what the crowd lacked in numbers it made up in enthusiasm for the spirited competition kept everyone on the alert.

The previous 10-mile record on the Chicago track was held by Resta and was 8 sec. more than De Palma's time made to-day. In setting the record for 20 miles, De Palma beat his own time, 10 53.08 made at Sheepshead Bay last August.

#### Government Wants Stenographers

WASHINGTON, July 29—The Department of Military Aeronautics, recently organized, has grown to include over 1000 civilian employees in addition to the officers and enlisted men. Thirty stenographers and 50 typists are needed by this department, particularly those who are qualified to take dictation and make transcription in both French and English. Applicants should call upon or address the Civilian Personnel Office, Department of Military Aeronautics, Building D, 6th and B Streets, N. W., Washington, D. C.

#### Will Continue Motorcycle Service

ST. LOUIS, July 29—The motorcycle inspection patrol service of the Federal Truck Co. of this city, which was described in Motor World of July 17, has been interrupted. Fred Dow, the inspector, has been made shop superintendent in the place of James L. Smith, who entered the United States service. As a test of the efficiency of the service Motor World asked Superintendent Dow if he intended to continue the service.

"President Baker asked the same question only yesterday," said Dow, "and I told him that I certainly would continue the service as soon as I laid my hands on the man to carry on."

## NEXT WEEK

Motor World will publish a complete, illustrated article covering every detail of the National Tractor Demonstrations.

## WATCH FOR IT

## Used Cars Sell Well Throughout the West

### Dealers Report Brisk Demand and Excellent Prospects—Dealer Scours Territory

DETROIT, July 29—Brisk sales of used cars are reported from all quarters around the Detroit territory. Only very few dealers state that business is not as good as it should be. Practically all dealers estimate their July business to be from 25 to 33 1/3 per cent better than during the month of June, and nearly all of them show marked increases over last year's business. One dealer reports an increase of 100 per cent over last year, while another gives the figure as 25 per cent in advance of a year ago.

During the first 27 days of July the Simonds Sales Co. reports that it had sold ninety-five used cars and ninety-nine new ones—forty-nine of these were "trade-ins." All dealers state that the used-car business has a good future.

Liberty Loans, while they had a dampening effect on business during the time of the campaigns, have had a stimulating effect on car sales later. The money invested in Liberty Bonds has made it possible for many people to buy cars owing to the fact that it assisted them very materially in having enough cash value to make the first payment, which is usually the big obstacle for the average car purchasers.

The future used-car business is exemplified in the action of the Thomas J. Doyle Co., distributors of Dodge Brothers cars, that is about to establish another company to be known under the same name. It will be entirely a new organization, formed to merchandise cars—buy and sell used cars. No cars will be accepted on consignment; all cars will be bought outright for cash and sold on easy terms.

Three men have been sent out on the road to cover the entire country in search of used cars. A large store at 734 Woodward Avenue has been leased, and when fully equipped will be one of the best appointed used-car salesrooms in the country. All lines of cars will be handled. The new business will open its activities about Sept. 1.

### Reorganize Motor Transport

WASHINGTON, July 30—The Motor Transport Service of the army is to be reorganized into two divisions similar to like divisions in the aircraft program. One of these will have control of purchases, production and maintenance, and the other will control operating and training.

The first division will continue under the present Motor Transport Service and is to be headed by Col. Fred. Glover.

The second division will be a separate army division and will be known as the Motor Transport Corps. This division

will be headed by Major Barrett Andrews who has seen a year of service with the Motor Transport Corps of the American Expeditionary Forces on the other side and who is to be promoted to a colonel.

The Motor Transport Corps is to be further divided into two sections, one under Lieut. Col. W. D. Uhler, which will have charge of operation and convoy, and a second which will have charge of training and will be under the temporary supervision of Major Andrews.

He will institute a system of training by which American drivers will gain experience similar to that obtained in France. Heretofore, the operation section of the M. T. S. was co-ordinated with the Maintenance Section and was in charge of George Randles. Randles will continue in charge of maintenance

### Forced to Move

In a recent case, an action to compel the removal of a garage building part of which was wrongfully erected on land owned by another, was instituted.

The court granted the order to remove the building, and allowed \$250 and damages, whereupon the garage owner appealed. The original holding was affirmed, however, the court saying "there is abundant evidence of malice and a disposition to unnecessarily annoy and inconvenience the plaintiff in the enjoyment of his property."

The buildings were not only placed so as to cover the last inch of ground which defendants mistakenly thought belonged to them to the north, but they placed unnecessary excrescences on the roof of the garage so as to effectually shut off light and air from plaintiff's south window and erected an ugly high board fence on the supposed line for the like sinister purpose.

### Puritan Gets Argo Electric

DETROIT, July 27—The Puritan Machine Co. has added another Orphan, having purchased the service repairs parts business of the Argo Electric Co., formerly of Saginaw, Mich. The entire stock of the Argo repair parts has been moved to Detroit.

### Samsons Built at Monroe Plant

PONTIAC, MICH., July 29—Three Samson tractors have been completed thus far in that part of the Monroe Motors Co.'s plant which the General Motors Co. leased some time ago. The schedule is to turn out 500 of the tractors in that plant, by which time it is expected that the tractor plant which the General Motors Co. is having erected in Janesville, Wis., will be ready for operation. The report that the company intended to take over the entire Monroe plant is denied. At the Stockton, Cal., plant of the General Motors, tractors for the western trade and the export business are being built as fast as possible. There are enough standing orders to keep that plant running for some time to come.

## Steel Situation Not Much Changed in Week

### Demands of Shipbuilding Industry Still Call for Large Part of Nations Steel

NEW YORK, July 30—A meeting here yesterday of various steel makers and government officials only served to emphasize the demands which the shipbuilding industry is making and will make upon the steel industry.

The only slight possibility of change seems to be that the ship people may, as was long ago requested by the steel people, present a more or less itemized budget of just what the ship people will need and when they will need it. If this is done, as may be announced later in the week, there should be more definite information as to what the automobile industry may and may not expect in the way of steel.

Yesterday's meeting did not indicate any relaxation in the steel situation. The demands of the ship people continue to be such that if suggested schedule is followed there will be a minimum of steel for industries not directly engaged in war work.

### Would Control Nearly Everything

WASHINGTON, D. C., July 30—The War Industries Board is to assume charge of everything—not only steel but all other raw materials and finished products except food, fuel and feeds.

All consumers are put under two broad heads about as follows:

- 1—Those that get materials
  - (a) through a Priorities Certificate
  - (b) through operating under the General Purpose List, or
  - (c) through being on the preference list.

2—Everybody else than these people get materials if there happens to be any left after all the other requirements in Class 1 above, are filled.

### Chevrolet Baby Grand Advances

FLINT, July 29—The Chevrolet Motor Co. will increase the price of its Baby Grand model \$100, from \$995 to \$1,095, and on Model 4-90, \$50, from \$685 to \$735, effective Aug. 1.

### New Body Model for Stephens 76

FREEPORT, ILL., July 20—A new 6-passenger body is now in limited production by the Stephens motor branch of the Moline Plow Co., Freeport, Ill. The body follows closely the lines of the former 4-passenger model but is longer to accommodate two auxiliary seats. It is fitted to the same chassis as is used in other Stephens models. Finish is in green with fine gold stripe and natural wood wheels. Among refinements are Blackmore curtain openers, bullet lights, rear tonneau light, electric light under the hood, accelerator foot rest, Johnston plate glass window in rear curtain, dash gasoline gage and 33 x 4 1/2 in. tires.



*How they are filling in the man-power gaps in Illinois. Here are grandfather, son and grandson of the family of Durger all working behind a Cleveland tractor*

### A. C. A. Futs Cassco Pump Through Test

NEW YORK, July 29—The Testing Laboratory of the Automobile Club of America, New York, has completed an official test of the Cassco tire pump made by the West Side Foundry Co., Troy, N. Y., and marketed by Edward A. Cassidy Co., New York City. The object of the test was to determine the time required to inflate three different size tires when the pump was being driven at different speeds. The pressure to which the tire was inflated depended on the size, the inflation being 20 lb. to the inch of width. The results of the test indicated that the pump was able to inflate a 30 x 3½ in. tire in from 43 sec. to 1 min. and 3 sec., according to the speed at which it is driven between the limits of 823 and 1138 r.p.m. A 34 x 4 in. tire requires from 1 min. and 20 sec. to 1 min. and 41 sec. between the speed limits of 821 and 1152 r.p.m. The inflation time of the 36 x 4½ in. tire varied from 1 min. and 45 sec. to 2 min. and 30 sec. when the pump ran between speeds of 828 and 1165 r.p.m.

### Detroit Fuel Committee to Go to Washington

DETROIT, July 29—To put squarely before the Fuel Administration the seriousness of the local fuel situation, a committee of leading business men of this city will go to Washington this week. The committee will be composed of J. J. Crowley, president of the Detroit Board of Commerce; W. K. Prudden, State Fuel Administrator; James Couzens, City Administrator; Mayor Marx, Charles Dean, A. T. Waterfall, Frank Blair and W. F. Connolly, chairman of the Board of Commerce special coal committee. It is very probable that either Henry Ford or John Dodge, and perhaps both, will join the committee.

The two main arguments, according to the committee, will be the importance of supplying the homes of munition workers with fuel and the great growth of the city. It is of prime importance to the government that the workers in munition plants be supplied with coal. It is

pointed out that cold homes and the worry and anxiety caused thereby would decrease the efficiency of workers and probably in many cases cause them to leave for other cities.

Crowley states that the allotment of the fuel administration of 1,201,000 tons of anthracite coal for the State of Michigan, of which Detroit will receive 601,000 tons, would be sufficient if it were not for the total elimination of all Pocahontas coal and coke. Although practically all the manufacturers have ample supplies for their winter requirements, fear is expressed that their workers will not have sufficient coal to maintain warmth in their homes which will have a great bearing on the workers' efficiency and perhaps cause them to seek other places to work.

### State Fair to Include Automobile Show

DETROIT, July 29—Detroit's dealers have purchased sufficient space this year to warrant the Michigan State Fair putting on its annual automobile show this fall. Secretary-Manager G. W. Dickinson announced that the show would be one of the features and will occupy the first floor of the Automobile Building. The second floor of the building has been taken over by the United States Government for a display of war materials, trophies from the European battlefields and other governmental exhibits that are of interest to the general public.

### Expect Chevrolet-G. M. Transfer

NEW YORK, July 30—It is regarded as probable that the formal transfer of stock between the Chevrolet Motor Co. and the General Motors Corp. by which Chevrolet becomes a division of General Motors, will be effected within a very short time. Although the complete plan has been ratified by both companies, the actual transfer of stock has not been made yet. That this will be done soon, however, is indicated by the fact that the Capital Issues Committee has taken favorable action on the application of the General Motors Corp. to issue \$28,000,000 additional common stock with which to acquire the Chevrolet property.

### Winningham Now in Charge of Gasoline

DETROIT, July 29—C. C. Winningham, one of the principal stockholders of the Hudson Motor Car Co., Detroit, who has had charge of the merchandising of the Hudson product for the last 8 years and of its advertising, has been appointed chief of the gasoline section of the Fuel Administration. He will direct the publicity of the division also and under his direction will fall the work of eliminating the waste of gasoline by distributors and consumers and conservation of lubricating oils. Methods will be inaugurated for the reclamation of oils that have been used.

### Klaxon Prices Advance

NEWARK, July 30—The Klaxon Co. has increased its prices, adding 5 per cent to the current list prices. By this method the consumer will stand the increased price, not the distributor, wholesale or dealer. The new list prices, effective July 18, are:

Models	Old Price	New Price
20-L .....	\$25.00	\$26.25
20-S .....	25.00	26.25
20-Deck .....	27.50	28.88
12-L .....	14.00	14.70
12-S .....	14.00	14.70
6 .....	7.00	7.35
6-Deck .....	8.50	8.93
5 .....	6.00	6.30
3 .....	4.00	4.20
3-V .....	4.00	4.20
3-MC .....	3.75	3.94
3-VMC .....	3.75	3.94

### More Room for General Aluminum

DETROIT, July 29—Construction operations on an extensive scale in erection of factory buildings for the General Aluminum & Brass Mfg. Co. is now under way. The buildings are being added to the company's group, and are to be used in completing extensive war work for the government. The new units are as follows: an aluminum foundry, two stories 100 x 100; brass furnace 40 x 100, to be equipped with sand bins in the basement and with simplex and coke furnaces.



## 89 Exhibitors Signed Up for Chicago Show

### Exposition on Municipal Pier In- cludes Trucks, Tractors and Accessories

CHICAGO, July 29—Eighty-nine exhibitors have contracted for space in the exposition which is to be given on the Municipal Pier, Sept. 14-21. The list follows:

Arrow Grip Mfg. Co.....Glens Falls, N. Y.  
Clark Publishing Co.....Madison, Wis.  
Carborundum Co.....Niagara Falls, N. Y.  
Fordowner .....Milwaukee  
Motor Vehicle Publishing Co.....New York  
Essenkay Products Co.....Chicago  
A. W. Shaw Co.....Chicago  
System on the Farm.....Chicago  
Twin City Varnish Co.....St. Paul  
H. G. Paro Co.....Chicago  
E. Kern Bros. Mfg. Co.....Flandreau, S. Dak.  
Automotive Accessories Co.....Baltimore  
Perflex Radiator Co.....Racine  
New Lite Lens Co.....Chicago  
U. S. Auto Supply Co.....Chicago  
Brown & Caine, Inc.....Chicago  
Metal Specialties Mfg. Co.....Chicago  
Geo. D. Bailey Co.....Chicago  
Jefferson Electric Mfg. Co.....Chicago  
Atlas Specialty Mfg. Co.....Chicago  
The Reliance Co.....Chicago  
Harry Newman.....Chicago  
Advance Accessories Corp.....Chicago  
Bailey Non-Stall Differential Corp.....Chicago  
Zinke Co.....Chicago  
Milwaukee Auto Engine & Supply Co.....Milwaukee  
Shurnuff Mfg. Co.....St. Louis  
Romort Mfg. Co.....Oakfield, Wis.  
Champ Spring Co.....St. Louis  
Standard Underground Cable Co.....Pittsburgh  
Metal Ware Corp.....Chicago  
Burgess Mfg. Co.....St. Joseph, Mich.  
Blake Mfg. Co.....South Bend, Ind.  
Challoner Co.....Oshkosh, Wis.  
Cooper Auto Specialty Co.....Thomasville, Ga.  
Motor Car Equipment Co.....New York  
The Duplex Engine Governor Co.....Brooklyn  
Van Cleef Bros.....Chicago  
Edelman & Co.....Chicago  
Cummings Foster Corp.....Chicago  
Perry Auto Lock.....Chicago  
Defender Auto Lock.....Detroit  
McIntyre Mfg. Co.....Chicago  
The Dayton Wire Wheel Co.....Dayton  
W. D. Sullivan.....Chicago  
Dole Valve Co.....Chicago  
Empire Auto Specialty Co.....Chicago  
Koupet Auto Top Co.....Belleville, Ill.  
Heinzelman Bros. Co.....Belleville, Ill.  
Presto Cloth Mfg. Co.....Toledo  
Wood Hydraulic Hoist Body Co.....Chicago  
A. A. Lawder Sons Co.....Chicago  
The Wyman Sales Co.....Chicago  
Baslo Oil Co.....Toledo  
Baslo Oil Co.....Council Bluffs, Iowa  
Agrimotor.....Chicago  
Falls Motor Corp.....Sheboygan Falls, Wis.  
Buller Coupler Sales Co.....Madison, Wis.  
Orange Judd Co.....Chicago  
White Star Refining Co.....Detroit  
American Manganese Steel Co.....Chicago  
La Crosse Tractor Co.....La Crosse, Wis.  
Hooven Radiator Co.....Chicago  
Electric Steel Truss Wheel Co.....Kankakee, Ill.  
Guaranteed Tractor Corp.....Chicago  
One-Wheel Truck Co.....St. Louis  
Traffic Motor Truck Corp.....St. Louis  
Winthrop Motor Truck Co.....Winthrop Harbor, Ill.  
Hudford Co.....Chicago  
Mechanical Belt Co.....St. Joseph, Mo.  
K & D Lamp Co.....Cincinnati, Ohio  
New Era Specialty Co.....Grand Rapids, Mich.  
Eclipse Valve Grinder Co.....Kansas City  
Link Belt Co.....Chicago  
Harding & Co.....Chicago  
Anderson Electric Specialty Co.....Chicago  
Atlas Auto Supply Co.....Chicago  
N. A. Petry Co.....Philadelphia  
Reflex Ignition Co.....Cleveland  
Nilson Tractor Co.....Minneapolis  
Hoosier Auto Parts Co.....Muncie, Ind.  
A B & B Specialty Co.....Milwaukee  
Milwaukee Forge Machinery Co.....Milwaukee  
Higgins Spring & Axle Co.....Racine, Wis.  
S K F Ball Bearing Co.....Hartford, Conn.  
Forscher Motor Truck Mfg. Co.....New Orleans  
Sumter Division, Splittdorf Elect. Co.....Chicago  
Commercial Truckmobile Co.....Chicago  
Gray-Heath Co.....Chicago

The products of the following companies will be exhibited by the Gray-Heath Co.  
L. P. Halladay Company.....Streator, Ill.  
New York Coil Company.....New York  
A. C. Savidge Company.....Indianapolis  
Cuno Engineering Corp.....Meriden, Conn.  
Cole Gasoline Gauge Co.....Chicago  
Wright Roller Bearing Co.....Philadelphia  
Newtone Horn Company.....Brooklyn  
"X" Laboratories.....Boston  
Hudson Motor Specialty Co.....Philadelphia  
Jas. P. Neerup Co.....Chicago  
F. W. Oettinger Co.....New York  
Lockfast Tire Carrier Co.....Cleveland  
Standard Speedometer Company.....Boston  
General Appliance Co.....Boston  
Hansen Manufacturing Co.....Cleveland  
Gibraltar Jack Co.....New York  
Bell Manufacturing Company.....Detroit  
Continental Piston Ring Co.....Memphis  
A. E. White Machine Works.....Eau Claire, Wis.  
Harris & Reed Company.....Chicago  
Barcolo Manufacturing Co.....Buffalo  
Friden Manufacturing Co.....San Diego

## A Duty Done and a Profit Made

HARVEST time and Oct. 1 are coming. Harvest time means money in the farmer's pocket. Oct. 1 means that the clocks are going to be set back an hour and there are some millions of farmers' homes that will require an extra hour's illumination each night after the clock goes back to normal.

Doesn't this suggest anything to you? Doesn't it cry out to you, SHOUT AT YOU, YELL AT YOU to get busy on farm lighting plants?

Are you going to wait for somebody else to snake the business right out from underneath your nose?

If a man is to amount to anything in this world he must do something to help his fellow beings and he must, while doing it rake in some shekles for the betterment of himself and his family. The farm lighting plant will enable YOU to do both. You can make life easier and "brighter" for the farmer and you can at the same time pocket the commissions.

Are you content to sit down and wait for the passenger car business to come back to normal or are you going to get out and fill the gap?

It is your duty to get after this farm lighting business and the duty will not be any harder because of the profit involved.

### Motorcycle Dealers Organize

WILWAUKEE, WIS., July 29—Following the example set by the motor car trade in adopting and enforcing new regulations framed by the National Automobile Dealers' Association, the dealers in motorcycles and bicycles of Milwaukee have organized to put into effect a similar war conservation plan. The new organization is known as the Milwaukee Motorcycle and Bicycle Dealers' Association, and its officers are: President, Louis Peterick; secretary, J. J. Lantry; treasurer, C. D. Bremer. Motorcycle and bicycle shops, stores, service stations, etc., will close on Sundays and holidays, at 6 p. m. daily, and do business on a strictly cash basis.

## Lay Down Plans for General-United Merger

### Amalgamation Likely Soon Though Plan Has Not Yet Been Officially Ratified

NEW YORK, July 30—Negotiations having as their object the taking over of the United Motors Corp. by the General Motors Corp., the first inkling of which was given in an issue of Motor World last February, have now reached the stage where a definite plan for the exchange of stock has been laid down, and it appears likely that the deal will be completed within a few days.

It is proposed now that General Motors acquire United Motors through the exchange of three-tenths of a share of General Motors preferred and one-tenth of a share of General Motors common for each share of United Motors. At the present time General Motors common is selling for around 145, with the preferred at 82. On this basis it would mean that United Motors stockholders would receive \$39 worth of General Motors stock for each share of United, which at present prices is worth about \$32.

Although no definite action has been taken yet toward the ratification of this plan, it is regarded as likely that it will go through substantially as outlined. The United Motors Corp. has let it be known that it looks favorably upon the amalgamation, and it is known that General Motors has for several months been planning such a course of action.

The acquisition of United Motors by Durant interests appears entirely logical, inasmuch as it would give General Motors control of a big parts-making company. Chevrolet already owns 106,000 shares of United stock, and this will assist in the consolidation.

The United Motors Corp. was formed in May, 1916, and was an amalgamation of the following companies engaged in the manufacture of accessories, which are controlled by stock ownership:

Perlman Rim Corp.....New York  
Hyatt Roller Bearing Co.....Newark  
New Departure Mfg. Co.....Bristol  
Dayton Engineering Lab. Co.....Dayton  
Remy Electric Co.....Anderson  
Harrison Radiator Corp.....Lockport  
Klaxon Co.....Newark

The manufacturing departments of these various companies remain separate, but close co-operation is effected in the sales and service departments. Gross sales of the constituent companies for the nine months ending March 31, 1917, were \$23,500,000, as compared with \$17,200,000 for the corresponding time in the previous year. The authorized and outstanding stock of the company consists of 1,200,000 shares (no par value) of common. The officers of the company are: President, Alfred P. Sloan; vice-president, E. A. Deeds; secretary and treasurer, DeWitt Page; chairman of the finance committee, L. G. Kaufman.

## Prominent Tradesmen Assume New Duties

### Resignations and Promotions Place Workers in New Places

R. B. Merrill has been appointed Director of Material Purchases by Swope-McCracken Co., Detroit, production machinist, which supplies materials to more than 100 concerns in the automotive industry. He was formerly connected with the Ford and Packard companies.

L. H. Ware has been appointed manager of the Bearings Service station at St. Louis, succeeding Carl Jones, who entered the navy.

Earl Moore, for a long time with the Moon Motor Car Co., St. Louis, has joined the staff of the Superior Motor Car Co., in that city.

H. P. McQuiston, for three years in charge of used car departments in St. Louis and founder of the Used Car Exchange in that city, has quit the used car end to sell King cars for the Nash Auto Sales House of St. Louis.

A. C. Westfall, former traffic manager for the Cadillac Motor Car Co., Detroit, has become associated with the Lincoln Motor Co., Detroit, in a similar capacity.

J. F. Bowman, vice-president and general manager of the Acason Motor Truck Co., Detroit, has resigned, and H. A. Conlon, sales manager, has been elected vice-president and director of sales. Bowman has been an official of the company for the past year, having resigned as sales manager of the Federal Motor Truck Co. after 5 yr. service to take the position.

H. S. Benjamin has been appointed sales manager of the Holley Kerosene Carburetor Co., Detroit. He joined the Holley company after a term with the Saxon Motor Car Corp. as general sales manager.

### Champion Spark Plug Convention

TOLEDO, July 29—Sixty members of the Champion Spark Plug Co.'s sales force met here last week for a 3-day mid-summer convention. R. A. Stranahan, president, and F. D. Stranahan, treasurer, acted as hosts, and F. B. Caswell, sales manager, assumed the responsibility of planning the program and seeing it through. The first day of the convention was given over entirely to business discussions. The noon luncheon was served in the dining room at the factory, and at 6 o'clock sharp the visitors were hustled into waiting taxicabs and driven downtown to the Y. M. C. A., where, after a light "feed," they donned their "gym" suits and proceeded to prove their physical fitness, which is one of the things insisted upon by the company. The day was brought to a close with a banquet at the Toledo Club. The program for the second day included a trip through the plant in the morning, followed by addresses from men prominent in advertising and sales circles. Among those who spoke were: Harry Tipper, of the Class Journal Co., on "Making Sales"; B. W. Ruark on "Salesmanship," and D. M. Barrett on "World's Salesmanship Congress." A banquet at the Inverness Golf Club took place in the evening. An

engraved certificate bearing the name of each man on the company's honor roll and signed by both president and sales manager was mailed to the seventy-seven men now with the United States forces. The last day was spent in Detroit, the company chartering a special car for the trip. During the forenoon a tour of inspection was made of the company's porcelain factory, after which a luncheon was served at the Detroit Athletic Club.

### 50 Navy Flying Boats Shipped

WASHINGTON, July 27—The first order for 50 naval flying boats placed with the Navy aircraft factory at Philadelphia has been filled and the greater part of the machines are now flying over British waters. This was revealed to-day in a statement by Secretary of the Navy Daniels. The first flying boat was given its successful trial flights March 27, 1918. The forms for the first boats were laid Oct. 12 and this despite the fact that the factory building itself was not completed until Nov. 28. These feats actuated Secretary Daniel's letter, containing these statements and felicitating Naval Constructor F. G. Coburn who is in charge of the factory. The contract for the aircraft factory was awarded Aug. 6, 1917, and work began the same day. The original factory had 160,000 sq. ft. of floor space. An extension adding 55,400 sq. ft. was begun Feb. 26, 1918, and is now completed.

Guy W. Morgan, former president of the Abbott Motor Corp. in Detroit, who was in charge of the spare parts, tires and accessories for the original motor transport section of the United States army, has been appointed to similar duties under Colonel Glover in the new motor transport service.

R. J. Monroe has been appointed district manager for the Denby Motor Truck Co., in the Rocky Mountain section, and will make his headquarters at Denver.

## Campbells to Handle Jobbers' Fall Exhibit

### Ernest W. Will Do the Decorating and Chester I. Will Manage the Details of the Affair

CHICAGO, July 27—The National Association of Automobile Accessory Jobbers has definitely secured Medinah Temple as the place of its exhibit, which is to be held Oct. 28 to Nov. 2. Arrangements have been made for the decoration with the Atlantic Decorating Co., Boston, which does the Boston show every year and which did the Cleveland, Minneapolis and Kansas City shows last winter through the National Association of Automobile Show Managers. Chester I. Campbell, manager of the Boston show, and a brother of E. W. Campbell, manager of the decorating company, will manage the exhibit. Chester is at present on the Pacific Coast, managing a war exhibit for the Government.

Applications for space and general interest in the project indicate that the exhibit will be successful. Commissioner Webster states that "if things go on as we hope they will, I think it will be another milestone in the organization's wonderful history."

### Chester Garages Adopt War Service

CHESTER, PA., July 26—The Chester Automobile Dealers' Association has started a movement to have all garages in the city closed every night at 6, except on Sundays, when the garages would be closed all day, to follow the suggestion of the War Economy Board as put in practice recently at Philadelphia and elsewhere by dealer associations.

### Automotive Securities Quotations

	Bid	Asked		Bid	Asked
*Ajax Rubber Co.....	61	63	*Maxwell Motor Co., Inc., 1st pfd.	56	57
*J. I. Case T. M. Co., pfd.....	80	86	*Maxwell Motor Co., Inc., 2nd pfd.	21	22
Chalmers Motor Co., com.....	4½	6½	Miller Rubber Co., com.....	110	112
Chalmers Motor Co., pfd.....	20	30	Miller Rubber Co., pfd.....	95	96
*Chandler Motor Co.....	85	85½	Packard Motor Car Co., com.....	115	125
Chevrolet Motor Co.....	130	133	Packard Motor Car Co., pfd.....	94	97
*Fisher Body Corp., com.....	28	39	Paige-Detroit Motor Car Co.....	18	20
*Fisher Body Corp., pfd.....	89	90½	Peerless Truck & Motor Corp.....	14½	16½
Fisk Rubber Co., com.....	55	58	Portage Rubber Co., com.....	119	122
Fisk Rubber Co., 1st pfd.....	98	103	*Reo Motor Car Co.....	13¾	14¾
Fisk Rubber Co., 2nd pfd.....	78	83	*Saxon Motor Car Corp.....	6¾	7¾
Firestone Tire & Rub. Co., com.....	108	111	Springfield Body Corp., com.....	..	..
Firestone Tire & Rub. Co., pfd.....	92	95	Springfield Body Corp., pfd.....	..	..
*General Motors Co., com.....	154	154½	Standard Motor Construction Co.	12	14
*General Motors Co., pfd.....	80	82	Standard Parts Co.....	60	65
*B. F. Goodrich Co., com.....	46	46½	*Stewart-Warner Speed. Corp.....	59¾	60¾
*B. F. Goodrich Co., pfd.....	98	100	*Studebaker Corp., com.....	45¼	45¾
Goodyear Tire & Rub. Co., com.....	166	170	*Studebaker Corp., pfd.....	83	85
Goodyear Tire & Rub. Co., pfd.....	97	97½	Swinehart Tire & Rubber Co.....	50	55
Grant Motor Car Corp.....	2½	3½	United Motors Corp.....	32	32½
Hupp Motor Car Corp., com.....	3½	4	*U. S. Rubber Co., com.....	61¼	61½
Hupp Motor Car Corp., pfd.....	79	82	*U. S. Rubber Co., pfd.....	104½	105
International Motor Co., com.....	27	33	*White Motor Co.....	42½	43¾
International Motor Co., 1st pfd.....	55	65	*Willys-Overland Co., com.....	19¾	20
International Motor Co., 2nd pfd.....	33	40	*Willys-Overland Co., pfd.....	81	84
*Kelly-Springfield Tire Co., com.....	50	51			
*Kelly-Springfield Tire Co., 1st pfd.....	79	87			
*Lee Rubber & Tire Corp.....	21	21½			
*Maxwell Motor Co., Inc., com.....	28	28½			

\*At close July 27. Listed N. Y. Stock Exchange. †Par value \$10.

## Milwaukee Links Show with Expansion Plans

### Considering Extending Association to Include All Divisions of the Automotive Trade

MILWAUKEE, July 29—Frank J. Edwards, head of the Kissei-Kar Co. and the Edwards Motor Car Co., Dodge dealer, Milwaukee, has been appointed chairman of the show committee of the Milwaukee Automobile Dealers, Inc., to take charge of the annual fall show to be held in conjunction with the Wisconsin State Fair at Milwaukee, Sept. 9 to 14. Edwards will be assisted by Leslie D. Frint, Oldsmobile; Alfred Reeke, Nash, and R. J. Healy, Westcott and Stanley. The active management of the show will be in charge of Bart J. Ruddle, assistant secretary and manager of the M. A. D. At the latest meeting of the association, the proposition of enlarging the scope of the body to include truck, accessory and supply, and tire divisions, was considered, and a special committee was appointed to make further investigation of the feasibility of the plan and ways and means of carrying it out. This committee consists of Jesse A. Smith, Hudson and Essex, chairman; Ray C. Chidester, Packard, and Frank J. Edwards, Kissel and Dodge. The M. A. D. is now distinctly a motor car dealers' organization, and the proposed changes would make it a broad trade association covering all lines of activity in the industry. A joint meeting of the various elements is planned to be held shortly.

### St. Louis Ford Plant for War

ST. LOUIS, July 29—The Ford Assembly plant here has been turned over to the U. S. Quartermaster and with the end of the fiscal year offices will be opened elsewhere so that the entire building will be at the disposal of the Army. Ford cars shipped here during the war will come set up from either the Kansas City or Chicago assembly plants. It also was announced that during the year just closed, dealers in this territory had received 75 per cent of their allotment but the next year was said to be uncertain as to number to be distributed.

### Refund "In Transit" Fines

ST. LOUIS, July 29—Recently two dealers were arrested by a night policeman at Shelby, Mo., and were fined by a justice of the peace for driving cars through that town without a license. The cars were in transit and carried one set of license plates, on the front of the first car and rear of the last, the others being marked "In transit." The dealers complained to the N. A. D. A. and President Vesper took the matter up with Gov. Gardner, who referred it to Secretary of State Sullivan with a recommendation to act. Sullivan at once ordered the Shelby officials to refund the fines and called attention to a recent federal re-

quest concerning motor cars in transit. He also notified each county in the state that "in transit cars" were to be given every protection instead of being harassed.

### Campbell in Los Angeles

BOSTON, July 29—Chester I. Campbell, secretary of the Boston Automobile Dealers' Association and manager of the Boston show, will open Aug. 1 in Los Angeles with the allied war exposition which he is managing for the government. He will close in Los Angeles Aug. 11 and expects to come east by way of Kansas City in the fall.

### Truck Route for Lebanon

LEBANON, PA., July 28—Merchants of this city, through the medium of the Lebanon Chamber of Commerce, have inaugurated an intercity trucking service. Van trucks and a few of the army type will be operated by Thomas Herb, a merchant of this city, and Howard I. James, a furniture dealer, also will place several trucks in service, which will start with Reading and Philadelphia as terminals, gradually reaching out as business develops.

### Service for Regal Cars at Old Plant

DETROIT, July 27—Maurice Rothschild, has purchased the complete plant of the defunct Regal Motor Car Co., including all the property, good-will, patterns, etc., and will locate in Detroit and operate the property in preparation for active manufacturing at the close of the war. He will carry out service for Regal owners, but will not engage in manufacturing until the close of the war.

### East St. Louis Names War Service Station

ST. LOUIS, July 29—The East St. Louis Automobile Trade Association, organized last week, has named the Seifort Auto Sales Co. as the emergency repair company, to remain open nights and Sundays. The plan adopted was similar to that adopted in St. Louis. This closing, which became effective yesterday, was a great satisfaction to St. Louis, as considerable Sunday trade was crossing the bridge from St. Louis on Sundays.

### BOOK REVIEW

The Clerks' Book, by Frank Farrington, Merchants' Help Publishing Co., Delhi, New York. Farrington has been all the way through the merchandising field. When he began first he had a dollar and a half a week, and has picked up a great deal of information which he passes on to salesmen in the form of short paragraphs. Perhaps any one of these paragraphs may prove a turning point in the career of the man who reads it. The book is a small pocket-size edition of about 100 pages. It is full of those little mental prods that keep the ambitious salesman going in the right direction. Even a man not a clerk could get inspiration out of it.

## They Are Plowing by Night at Bloomington

### Hot Sun Makes Sundown the Start of a Pleasant Day—Dealers Demonstrate with Lamps

BLOOMINGTON, ILL., July 29—The intensely hot weather in the closing weeks of July forced many farmers of central Illinois to do much of their farm work at night. Following the cutting of wheat and oats plowing commenced, and tractors, equipped with searchlights, go over the fields with as little handicap as if moving in daylight. Tractor agencies have been quick to see this advantage and salesmen have been giving demonstrations upon many farms. One demonstration, arranged by the agent of the Moline Universal, took place on the Barnes farm in Macon County. The affair was well advertised and several hundred farmers assembled to witness the test. Carrying powerful searchlights the machine plowed an acre per hour, and by morning was ready for an all day job if required.

### Fix-Your-Own-Car Club

ST. LOUIS, July 29—A new wrinkle in the way of keeping a service shop open on Sunday and evenings has been introduced by the Miller Motor Mart Co. of 5883 Delmar Boulevard. This company has organized an "Owners' Repair Club" among its customers. For the dues paid the members have the privilege of using tools to make adjustments and repairs on cars, doing the work themselves. Supplies, of course, come extra. No objection has been raised to this service, as no mechanics are required.

### St. Louis Briscoe Salesmen Convene

ST. LOUIS, July 29—Seventy-five Briscoe dealers met here last Friday to attend the opening of the new Briscoe Motor Sales Co. salesrooms, warerooms and shop and to hear what was expected of them during the war. These dealers also sell the Liberty car and J. E. Fields of the Liberty Motor Car Co. was one of the speakers. He told the dealers exactly what that factory could foresee and just where they stood and what they must expect to save in the way of labor conservation, which the factory regarded as the key to the situation. The dealers pledged their loyalty to the U. S. and its Allies to their utmost effort.

### St. Louis Finishing Work

ST. LOUIS, July 29—The St. Louis Automobile Manufacturers' and Dealers' Association has completed the task of naming an N. A. D. A. membership committee in the sections of Missouri and Illinois allotted to the association. Assistant Secretary Holke, of the N. A. D. A., presided at the meeting in the absence of President Vesper, and R. E. Lee, secretary of the St. Louis association, has undertaken the detailed work of carrying on the membership campaign.



ONE of those new buildings which make an automobile man proud of his business was recently opened in Pittsburgh by the Studebaker Sales Co., of which Aaron DeRoy is president. It adjoins the Schenley theater, on Forbes street, is opposite the Schenley Hotel and is next to Forbes Field, where all the baseball games are played. It cost \$150,000, is 60 x 140, 5 stories, of reinforced concrete, has no posts in front, cantilever support being used, has a big, well lighted salesroom with 6500 feet of floor, and complete garage and service facilities. There are showers and other conveniences for the workers



## New Sales Building

Next to Ball Park

Next to Theater

Opposite Hotel

## By These Signs Shall Ye Know Them

(Continued from page 16)

sistant Secretary T. D. Beard, "derive a great deal of good from having this membership certificate hung up in their establishments. In a way, it keeps away shark solicitors. It is an easy matter for a member to say—at the same time pointing at the certificate of membership—'I am a member of the Chicago Automobile Trade Association, and cannot contribute to your proposition.'"

The Chicago association, which is purely local, does not encourage its members to print the emblem or name of the association on letter heads. There are many advantages and some disadvantages. It is believed that customers who have trouble with individual members would vent some of their spite on the association as a whole were all members to carry the emblem. Other member benefit matters also enter into the situation.

What influence the emblem has depends, of course, upon what it stands for, and people soon associate with this emblem their ideas about the organization.

"For example: Whenever you see the trade-mark 'Packard' you immediately associate this with quality, reliability, high standard, and other things. In like manner, if the association is able to be of benefit to its members, to stand for the things which are right and advance

their interests, it will come to stand for those ideas among the automobile trades. If, on the other hand, it does not do those things, it will be an object of ridicule among this class of people.

"If members display this sign in their windows and use it on their advertising and stationery, do business on the square, give prompt and reliable service, and make reasonable charges, then this emblem will stand for those things with the traveling public, and a man will always feel safe when he drives his car into a garage displaying one of these signs.

### Will Increase Prestige

"This is one of the ideals we have before us, and which we hope to realize. The displaying of this sign by members will increase their prestige. Customers may know what this association is, or what it stands for, but the fact that a man is a member of this organization indicates that he is progressive, that he is not depending upon his own resources alone, but that he has allied himself with others in the same business, and can draw upon them for help and support. It will give the public confidence in the man.

"The use of the emblem will also help to build up the organization, as those who are not members, seeing the emblem used

by their fellow tradesmen in their own city and in other cities, will stop to consider what the association is, and will want to be able to display one of these emblems as well. They will not want the traveling public to feel they are behind anybody else.

"So far our emblem has been used only on the stationery and in newspaper advertising of our members. Each member is furnished with two electrotypes, one small one for use on his letterheads and a larger one for use in newspaper advertising and on literature which he puts out. These electrotypes are sent to a member as soon as his application is accepted by the membership committee.

"We are now having some window signs made, displaying the emblem. One of these will be sent to each member, and he will be requested to display it prominently in his place of business. At least 75 per cent of our members are using the emblem on their letterheads or in their advertising."

Associations in different sections use certificates, signs, emblems, electrotypes and other marks in their promotion work. For letter-head and literature a small seal or monogram is common, while the same enlarged, or a certificate, is used in the member's place of business. A number of samples of emblems and certificates are illustrated with this story.



## Four Types of Trucks in Order for 75,000

### Army Adopts New TT Model for Heavy Hauling—Dodge and Cadillac Standard

WASHINGTON, July 25—Seventy-five thousand trucks and passenger cars have been ordered to date. Four trucks, including the Class AA, A, B and a new TT, form the cargo truck program. The TT truck, official announcement of the adoption of which was made to-day, is a four-wheel drive type designed by the Engineering Ordnance Department. Several models have been completed and tested. This truck was designed in reply to a request from General Pershing, who stated that the cars and trucks now used in France were not satisfactory. The TT truck is especially suitable for hauling large guns over rough country, and has the ability of a tank to go over places generally considered impassable to other vehicles.

The Ford passenger chassis, following the request of the American Expeditionary Forces, have been adopted as a standard chassis for use in the army as a passenger car, light ambulance, light truck and so forth. There are now 3000 Ford ambulances in use in France, and this number will soon be increased to 8000. The Ford Motor Co. is working on an order for 5000 light delivery trucks, production of which began July 22, at the rate of 200 per day. The principal reasons for the wider use of the Ford are the ease of repairing, cheapness of operation, large production and the extremely low initial cost and the fact "that it can be used where many other passenger cars cannot."

The other two types of passenger cars tested and selected are the Dodge chassis and the Cadillac chassis. These are not new and are the regular models with certain additions and deductions. They will be produced in other factories if the needs of the Government require it.

The AA truck, which is the GMC  $\frac{3}{4}$ -ton model, was decided upon because of its low gasoline consumption and its light weight. The principal change on it from the regular model is a superior spring development needed because this model is to be used not only for cargoes but as a heavy ambulance also. Seven thousand five hundred of these trucks are being ordered from various factories.

The Class A truck, which is the White  $1\frac{1}{2}$ -ton truck with some changes, was selected after tests of many commercial trucks in all conditions of weather and load. It was adopted according to the Motor Transport Service because of lower gasoline and oil consumption, more satisfactory performance both in Mexico and France, high speed work with pneumatic tires and the low cost of spare parts, the cost being approximately equal to the cost of the chassis complete. The Class A, to be used for staff observation, reconnaissance and as a high-speed truck.

One of the principal reasons for retaining the Class B model, originally known as the Liberty truck, says the Motor Transport Service, is its maintenance. Eighteen thousand of these trucks have been ordered. The cost of this truck is less than that of any other commercial truck of the same capacity. The cost of the spare parts combined is identical with the cost of the chassis.

The Class B truck has given satisfactory service, a test of 15,000 miles, and was found to have greater strength, more power, more ability and to be better qualified on rough roads, an important factor because this truck will operate in a zone of fire. In rejecting many trucks by the test, the Motor Transport Service states that the rejections were in no way reflections of the commercial value of these vehicles. A majority of these were made for city work and consequently could not be expected to do exceptionally heavy rough work as required in France.

### Pierce to Bring Out New Model With Twenty-four Valve Engine

BUFFALO, July 27—The Pierce-Arrow Motor Car Co. will begin deliveries on Sept. 1 of a new passenger car model equipped with a six-cylinder engine having twenty-four valves, detachable cylinder heads and thermostatic control of the cooling system. There will also be certain other detail improvements in the chassis which, so far as dimensions go, will be similar to the smaller one of the two models now produced.

### Car Manufacturers in the Dark Cannot Predict Outcome

DETROIT, July 23—There has never been a time when it was more difficult for manufacturers to guess what will happen. Passenger car manufacturers cannot plan for more than a week ahead. Frequently plans must be changed the next day; rearrangements are almost constantly being made due to the unsettled condition of the steel situation.

It is expressed almost generally that passenger car production will be at low ebb during the period of the war. Already the majority of car manufacturers are below  $33\frac{1}{3}$  per cent of their normal output and rapidly nearing the 25 per cent line. A number of them have reached a production equal to 25 per cent of their normal capacity.

### Chevrolet to Move to Tarrytown

NEW YORK, July 27—The Chevrolet Motor Co. will vacate its manufacturing plant in New York City about Sept. 1. The entire equipment is to be removed to the Tarrytown, N. Y., plant and manufacturing activities for Eastern territory centered there. The principle offices, however, will remain in New York at Broadway and Fifty-seventh Street.

### Olds to Manufacture Trucks

LANSING, July 27—The Olds Motor Works is planning to bring out a  $\frac{3}{4}$ -ton truck in the near future. It is stated that the output will be 8000 trucks for the coming year.

## Run Tractor School at Illinois College

### Course to Last Two Weeks—Will Cost \$2 a Week—Study 8 Hrs. a Day—Dealers May Enter

CHAMPAIGN, ILL., July 27—A series of short course tractor schools to continue for two week periods from Oct. 15, 1918, to March 17, 1919, is being arranged for by the Department of Farm Mechanics of the State University of Illinois. The plan is to confine the attendance to about fifty pupils for each course, recruited largely from among tractor owners, although automotive and implement dealers who desire to attend will be admitted. The tuition will be \$2 a week and a total attendance of at least 500 is anticipated.

Eight hours of each week day will be devoted to the study of the tractor and tractor equipment. The time will be divided between two daily lectures of an hour each and six hours of laboratory practice. The school will be under the general direction of Prof. E. A. White, instructor in farm mechanics, but another lecturer and two or more competent tractor mechanics for laboratory work will be employed.

The course will comprise lectures and laboratory practice on the general construction, ignition, carburetion, lubrication, transmission and care of the tractor. Illustrative charts will be used for the lectures, while the work in the laboratory will be on the tractors themselves, several being owned by the university. In fact, the farm mechanics laboratory of the university is unusually well equipped not only with the actual farm machines themselves, but with full facilities for testing, and so forth. All these facilities will be put at the service of the tractor students.

The hope of the university is that during the continuance of the schools the pupils will be taught all the farmer needs to know about a tractor to make him an efficient operator. Attendance will not be limited to those who reside in Illinois.

### Philadelphia Likes Night Closing

PHILADELPHIA, July 25—The night and Sunday closing plan, as agreed to by the Philadelphia Automobile Trade Association members as suggested by the War Economy Board, is working out well as regards the members of that organization, but the majority of garages owned and operated by persons not members of the automobile trade body are remaining open as usual. One member of that organization, who until the closing plan was agreed on had been selling a motor car every night for nearly 2 weeks, promptly shut his place of business nights after agreeing to the proposition, and another member who has been doing a lively garage business every Sunday also readily complied, showing how the association is observing the plan.

## Specifications of the Leading Cars

[illegible]

ABBREVIATIONS—"A. Kent" Atwater Kent, "O. M." Owen Magnetic, "Rafid" Rayfield, "Numb" Newcomb, "C. Cone," "F. Friction," "G. Gearless," "CU" Control Unit, "Mag." Magnetic, "SS" Straightblade, "QD" Quick Detachable, "C" Clincher, "DC" Detachable Clincher, "QDR" Quick Detachable Reversible, "U" Universal, "R & M" Robbins & Myers. NOTE—37x5½ r means that the rear tires are 37x5½ and the front are smaller. Detachable top, 300x, means \$300 extra.

### St. Louis Fighting Thieves

ST. LOUIS, July 27—St. Louis was presented as one of the "worst automobile theft" cities in the country in a pamphlet which the American Automobile Insurance Co. distributed here last week. The newspapers commented freely on the document, and as a result the chief of police assigned 28 patrolmen to work in the motor-car section under the detectives already specializing in this work. It was shown that since Jan. 1 1059 cars have been stolen, and all but 303 have been recovered. Those not recovered represent a claim value of \$215,000.

The pamphlet represented that one of the chief causes of continued theft is because so many of the suspected thieves are permitted to escape trial, and convicted thieves are paroled instead of being sent to prison.

The book suggests that owners can help in three ways to cut down thefts:

1—Keeping the car locked with a good lock. Locks supplied by makers are not good. Ninety per cent of cars are stolen 10 minutes after they are left at the curb.

2—Carry only old tires as spares.

3—Put private identification marks on many parts of the car and accessories.

Finally, owners who suffer loss of cars are asked to follow up the prosecution.

It is figured by the insurance folk that the loss averages \$100 for each car, whether recovered or not. Milwaukee, where thieves are punished, is held up as the model anti-theft city.

Lessening of insurance rates is promised when thefts are reduced.

### M. A. M. A. Would Support Airplane Show

NEW YORK, July 27—At the quarterly board meeting of the Motor & Accessory Manufacturers Assn., it was decided that this body will support an airplane show if such is permitted to be held by the War Department. The show committee of the association was instructed to make its usual contracts with the National Automobile Chamber of Commerce covering both the New York and Chicago shows. E. W. Beach resigned as a member of the executive committee because of his affiliation with the Bureau of Aircraft Production in Washington, but will remain a member of the Board of directors. His place on the executive committee will be taken by William M. Sweet. One new member, the Sewell Cushion Wheel Co., Detroit, was elected for memoership.

### Philadelphia Home for Bessemer

PHILADELPHIA, July 27—Philadelphia is to add to its group of industrials the plant of the Bessemer Motor Truck Co., which is now located in Grove City, Pa. The big plant is to be moved here as quickly as its new building can be erected on a 17-acre site at Holmesburg. This industry already is engaged on government orders. The new factory will be 80 x 442 and will cost \$80,000. The reason for moving is that the corporation

desires to be nearer the shipping point, for the trans-shipment of motor trucks, instead of relying on the long road trip for deliveries to tidewater.

### Springfield Closes Sundays

SPRINGFIELD, ILL., July 27—Springfield has swung into line on the war conservation program. All garages now close at 6 p.m. on week days and all day Sunday and holidays. A committee to take charge of the new restriction orders has been appointed as follows: H. C. Constant, representing the garages; A. Turner, the accessory dealers; W. S. Van Duyn, the motor car agencies; F. R. McDonald, the repair men; and A. H. Barth, the battery service men.

### Hamilton Heads Lane Truck

KALAMAZOO, MICH., July 27—At a directors' meeting of the Lane Motor Truck Co., L. M. Hamilton, formerly secretary, treasurer and general manager of the company, was elected president and general manager. Dr. W. W. Lang, former president, was forced to retire from that office due to his large practice and other obligations. Edward W. Bitzer was added to the board of directors and elected secretary-treasurer.

### Transport Truck Elects Directors

MOUNT PLEASANT, MICH., July 25—At the stockholders' meeting of the newly formed Transport Truck Co., the following board of directors were elected: H. E. Chatterton, chairman; A. E. Gorham, W. D. Hood, E. J. McCall, C. E. Hagan, Attorney Warner and Milton A. Holmes. The new company will start the manufacture of its internal-gear-driven trucks immediately. While the new factory will probably not be finished for 90 days or more, construction of 1½- and 2-ton models will be begun immediately at another factory.

### Extends War Service

ST. LOUIS, July 27—The Henry Service Co., authorized by the War Service Committee to give emergency service on Sunday and at night, has had its scope extended to include emergency tire service. This follows the closing of all tire

service companies on nights, Sundays and holidays.

### Police Enforce N. A. D. A. Rules

CHICAGO, July 27—Enforced observance of N. A. D. A. war economy measures adopted by the Chicago Automobile Trade Assn. is contained in the ruling of Acting Chief of Police Alcock, that all motor car salesrooms and repairshops must close on Sundays and holidays and on week days at 6 o'clock. In reality the police order does no more than insure observance of the War economy measures by those not members of the association. Garages where repairs are made may stay open on Sundays, holidays and after 6 o'clock on week days for the sale of gasoline and tires only. According to the police order, repairs cannot be made after 6 p. m., but a garage may send out a tow to bring in a disabled car which, however, must not be repaired during closed time. Truck repairs are exempt, as in the N. A. D. A. measures.

### Oakland Goes Into Truck Manufacture

PONTIAC, July 27—Within 90 days the Oakland Motor Car Co. will have on the market a 1-ton truck. It will be of 130-in. wheelbase and have turning radius of 25 ft. to the left and 21 ft. to the right. It will be equipped with solid tires, 34 x 3½ in front and 34 x 5 rear. No schedule of production has yet been determined.

### War Service for Wilmington

WILMINGTON, DEL., July 27—As a patriotic move the members of the Wilmington Automobile Trade Association decided unanimously to close their places of business nights and Sundays, starting on Aug. 1. Thirty members of the association attended the meeting.

The subject was broached at a preliminary meeting last week, when a committee was appointed to canvass the trade. This committee reported last night, and the report was to the effect that, with one or two exceptions, the garagemen and accessory dealers were willing to line up with the suggestion, and it is thought that compliance will be universal as soon as the proposition is thoroughly understood.

## Coming Events

Salina, Kan. ....	National Tractor Farming.....	July 29-Aug. 2
	Demonstrations. A. E. Hildebrand, Manager.	
*Orange County, N. Y....	Tractor demonstrations. New York.....	Aug. 1
	State Food Commission; Calvin J. Huson, Director.	
Fulton, N. Y.....	Tractor demonstration (near Fair Grounds).....	Aug. 6
	State Food Commission. E. W. Underwood in charge.	
*Columbia County, N. Y....	Tractor demonstrations, New York.....	Aug. 15
	State Food Commission; Calvin J. Huson, Director.	
Indianapolis, Ind. ....	Automotive Show, Indiana State.....	Sept. 2-7
	Fair, Indianapolis Automobile Trade Association; John Orman, Manager.	
Chicago, Ill.....	Automotive and Accessories.....	Sept. 14-17
	War Exposition, Municipal Pier. H. V. Buelow, Managing Director.	
Canada.....	Tractor demonstrations.....	Sept. 17-18-19
Dallas, Tex. ....	Seventh Annual Automobile Show.....	Oct. 14-17
	Texas State Fair.	
Dallas, Tex. ....	Seventh Annual Texas Automobile Show.....	Oct. 14-27
	Texas State Fair.	
Chicago, Ill. ....	Convention and Automotive Equipment Exhibit.....	Oct. 28-Nov. 2
	National Association of Automobile Accessory Jobbers.	

\*Date and place not definitely fixed.



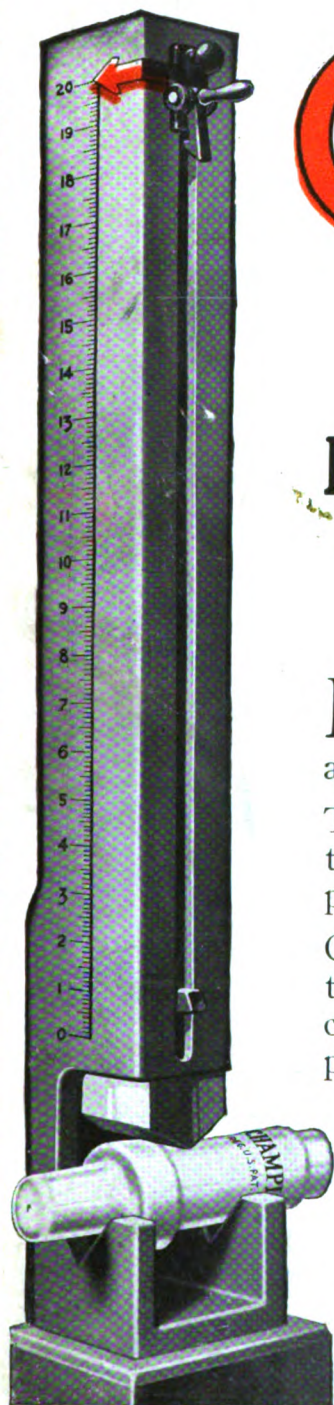
# MOTOR WORLD

for  
DEALERS, JOBBERS AND GARAGEMEN

Volume LVI  
No. 6

PUBLISHED WEEKLY  
NEW YORK, AUGUST 7, 1918

Ten cents a copy  
Two Dollars a year



## **Champion** Dependable Spark Plugs

### Big Increase In Porcelain Efficiency

*2½ Times the Resistance  
to Breakage from Shock*

**H**OW to make porcelain for spark plug insulation offer greater resistance to shock and vibration!

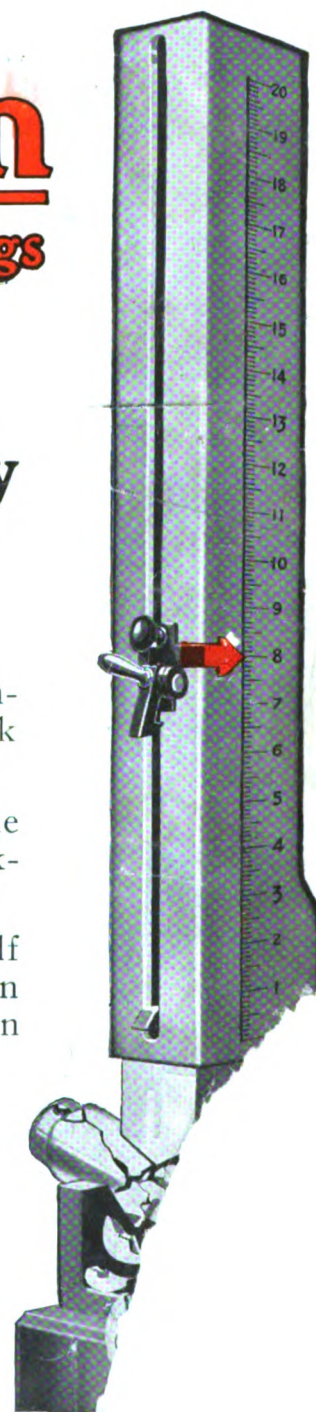
Ten years of original research work and the three-thousand-four-hundred-and-fiftieth experiment revealed the secret.

Champion 3450 Porcelain offers two and a half times the resistance to shock and vibration compared with the best previous Champion porcelain.

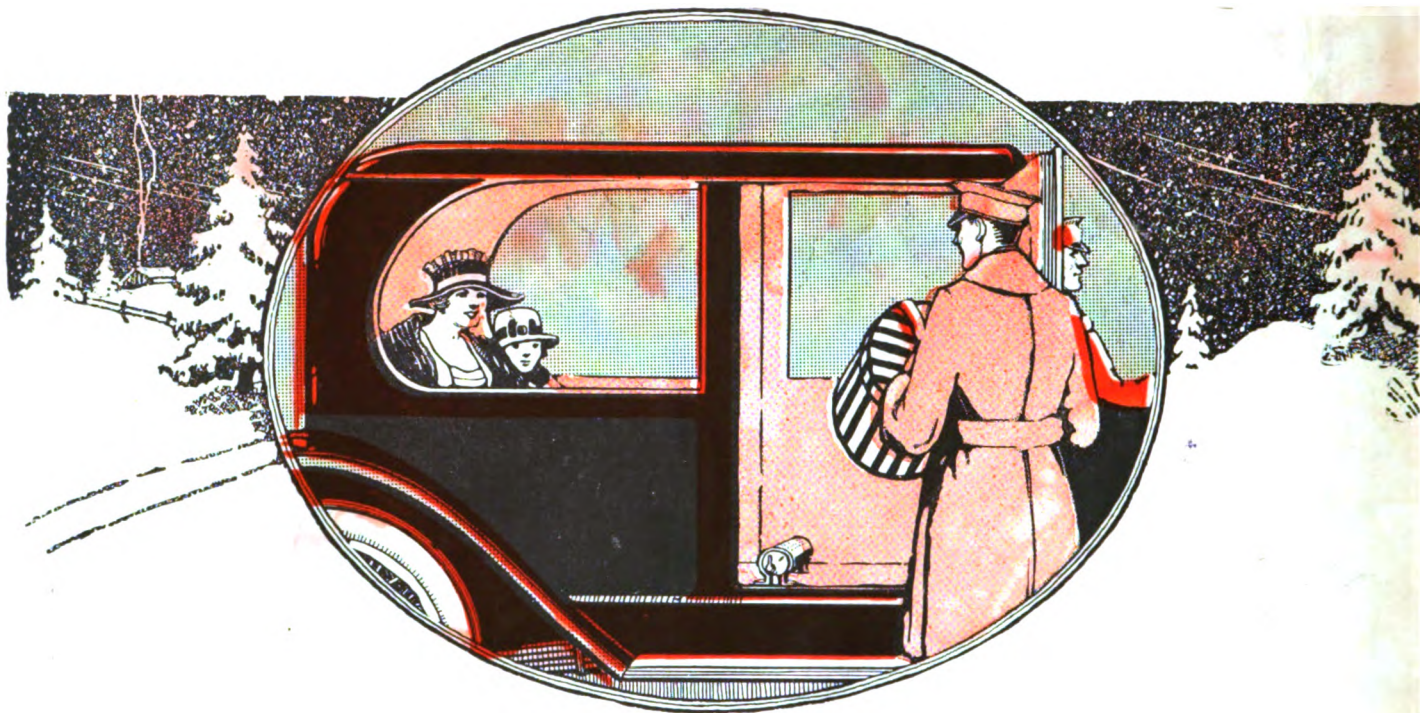
What an increase in that dependability which has given Champions their enormous prestige.

Always it has been to the dealer's advantage to sell Champions—now more than ever.

Champion Spark Plug Co., Toledo, Ohio







## UTILITY *Protected Foot Rail* HEATER

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Cold weather will soon be here, with a greatly increased demand for Utility Heaters. Our live dealers are ordering now, as there is already a well-established demand for Utility Heaters. It is to the advantage of every dealer and jobber to see that he can supply the trade. Better not wait—send in your initial order now.

The Utility Heater is the accepted standard of motor car heating. Its principle is sound, logical and convincing. It insures perfect driving comfort, even in the coldest weather, by tempering the atmosphere of the car to any desired degree. It keeps you warm all over, as though you were in a carefully heated house.

UTILITY Protected Heater—installed in place of the foot rail—is the heater universally recommended by thousands of motorists during the past season—the heater jobbers catalog and the heater manufacturers you will know install as standard equipment.

Ease of installation, attractive appearance, freedom from dust, odor or trouble make it the highly desirable heater.

*DEALERS—Ask your jobber or write to us for details*

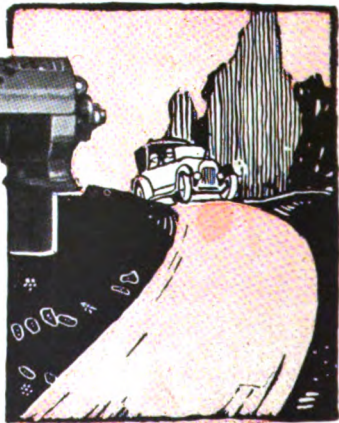
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Archer Avenue and Canal Street

Chicago, Ill.

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# MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

PUBLISHED EVERY WEDNESDAY BY

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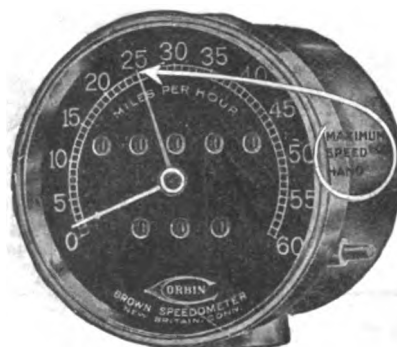
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**"My Mileage Record is Correct to the Dot!"**



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Get speedometer accuracy, plus durability by equipping the Corbin-Brown. Types for automobiles, motor trucks and motorcycles and special models for Ford cars.

Also specify the Corbin-Brown Maximum Speed Hand for convenience and safety. Registers your highest speed and stays at that point until you trip it back to zero. Does away with annoyance and risk of watching speedometer while driving at a fast pace.

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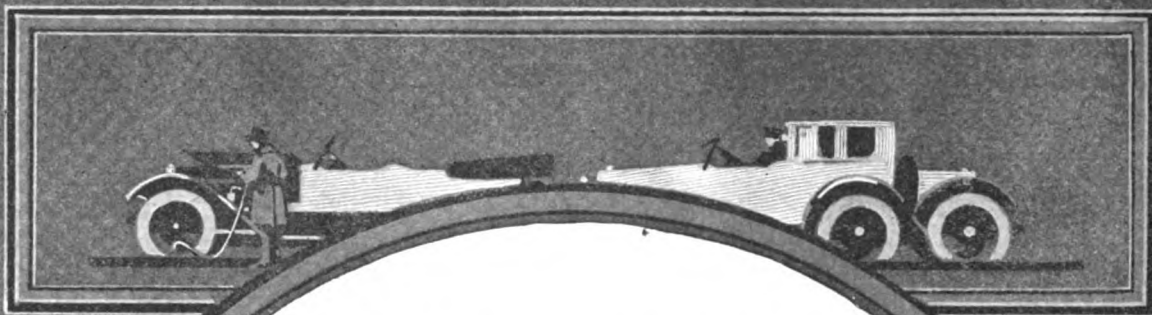
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And now it will be found on 90% of the cars that provide Engine Driven Tire Pumps, and in use among more than five hundred thousand car owners.

All argument pales before the light of such recognition.

**Kellogg Manufacturing  
Company**  
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8

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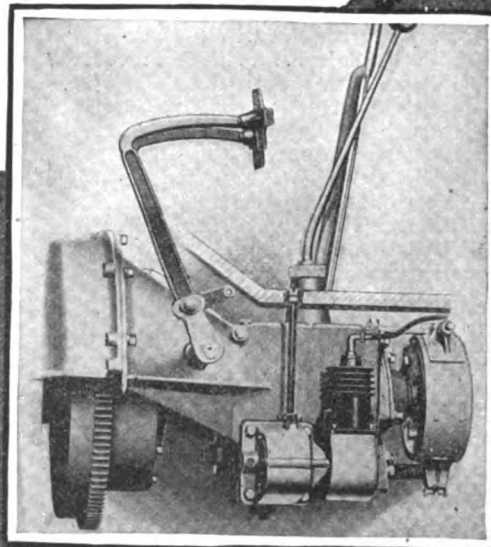
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DANIELS	PAIGE
DRUMMOND	PEERLESS
FIAT	SIMPLEX
FRANKLIN	STANDARD
HAL	STEPHENS
HAYNES	TEMPLAR
KING	WINTON
McFARLAN	WILLYS-KNIGHT
MARMON	88-4 88-8

"These cars are fully equipped."

For Every Car on This List we have a Kellogg  
Pump that fits like Standard Equipment.

BUICK	HUDSON
CHANDLER	NASH
CHEVROLET	OAKLAND
DODGE	OLDSMOBILE
FORD	OVERLAND

REO



When writing advertisers please mention Motor World—it identifies you.



# MOTOR WORLD

for  
DEALERS, JOBBERS AND GARAGEMEN

Vol. LVI

New York, U. S. A., Wednesday, August 7, 1918

No. 6

## VERY SIMPLE!



# RURAL MOTOR EXPRESS

## The Truck Dealer's Big Opportunity

*Business Development That Helps America Beat the Kaiser and Builds for the Future of the Truck Dealer*

### GET IN NOW

#### The Condition

The safety of our country depends on transportation.

Railroads are so congested they cannot carry all our food and other supplies.

Farmers hesitate to produce to capacity, fearing their produce cannot be marketed.

Large quantities of farm produce do not reach the market because of lack of transportation and are wasted.

About 20 per cent of farm help has been lost by draft and other causes.

Farmers cannot haul crops on the road and work on the farms at the same time.

THEREFORE, transportation must be provided if our country, our army and our allies are to be fed.

It has become a patriotic duty to help.

Dealers everywhere should be doing the same thing. They should begin at once to investigate the situation.

#### What the Rural Motor Express Is

To begin with, the Rural Motor Express is NOT a Return Loads Bureau proposition. It HAS NOTHING TO DO WITH IT.

A Rural Motor Express is one which does just about what the old city-to-country stage line used to do—and in many sections still does. The truck makes a trip through a section of country every day. It:

- 1—Takes city goods to the farmer.
- 2—Carries produce to the city.
- 3—Picks up and delivers goods along the route.

It carries eggs, butter, calves, meat, vegetables, fruit, poultry and other produce of the farm and returns to the farm anything the farmer wants brought back. Along the route it picks up and drops all sorts of merchandise. The rates vary, according to the distance and other items.

The Rural Motor Express performs several functions:

- 1—It relieves the railroads of short-haul work.
- 2—It taps territories that are not reached by railroads.
- 3—It brings fresh produce cheaply to the city markets, helping solve the food problem of the city man and the distribution problem of the farmer.
- 4—It develops country areas, makes land more valuable and advances prosperity generally.
- 5—It affords a great entrance into a truck sales field that is almost untouched as yet, for there are 4,500,000 out of America's 6,500,000 farms that are prospective locations for trucks.

#### The Remedy

Partial solution of the problem lies in the extension of Rural Motor Express Lines now in operation and the organization of new ones.

Farmers, truck gardeners and dairymen find that motor truck lines assure quick, daily transportation to market and enable them to devote all their time to their farms.

This encourages them to increase production and compensates for loss of farm labor.

Motor express lines afford opportunity for profitable enterprise.

Chambers of Commerce, Agricultural Colleges, Food Administrators, County Agents, Highway Departments, Bankers, Merchants, Farmers and Truck Dealers should use their influence and knowledge to encourage and assist the formation of such services.

THE truck dealer who has not begun to investigate the Rural Motor Express is passing up a big opportunity.

Complaint is made by those who are pushing the movement from a Government standpoint that the various dealers' associations are not showing the signs of life that should be exhibited on so vital a problem as this.

The Government is squarely behind this movement, and in several sections the dealers have taken hold of the Rural Motor Express with energy and are putting it over in a real way.

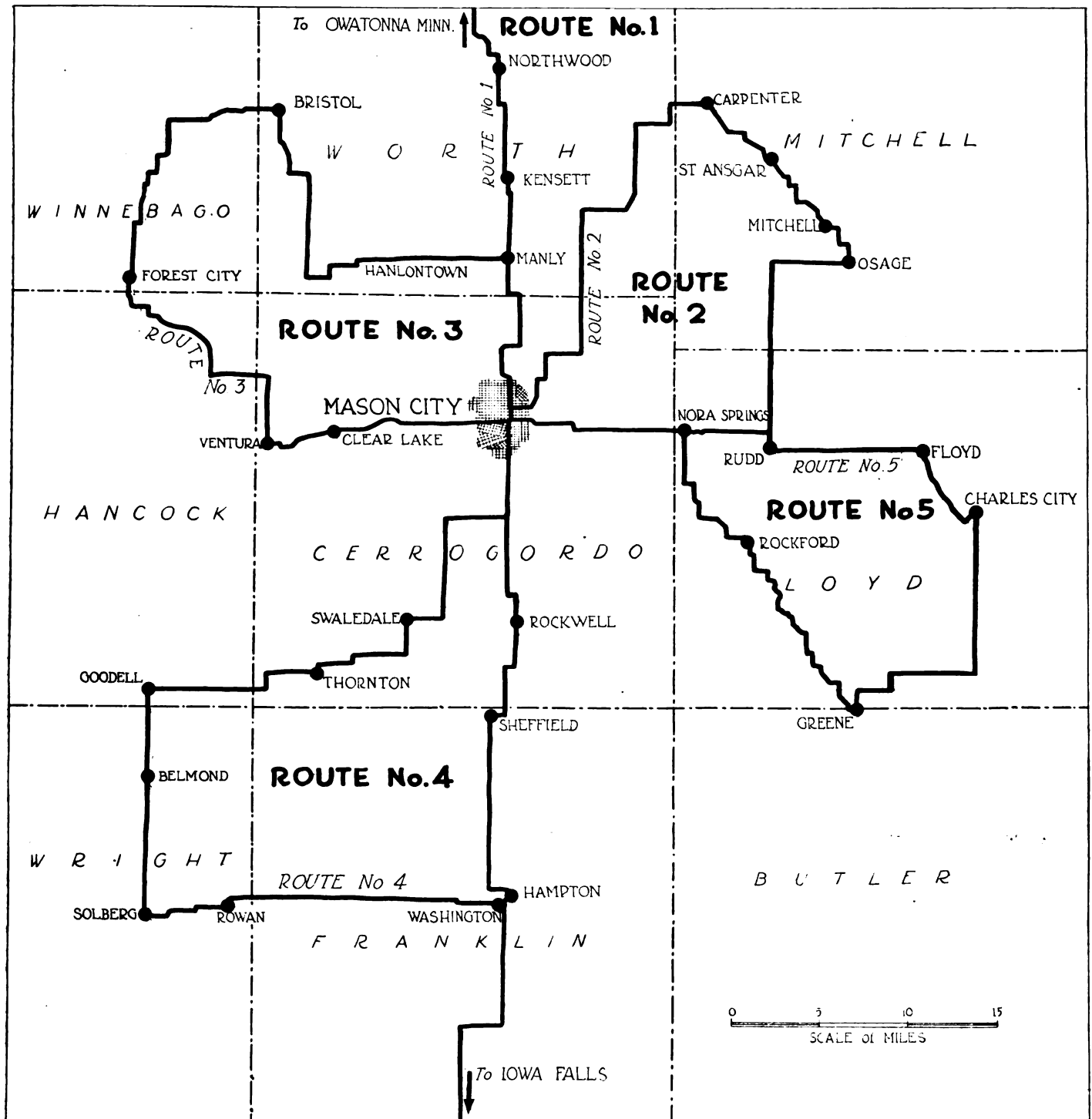
The Rural Motor Express is generally operated by an individual or company engaged directly in that business. The truck dealer does not ordinarily engage in this business, but he can if he wants to.

What the dealer does is this:

- 1—He investigates the layout of certain routes.
- 2—He runs a truck for a few days—or weeks—as a test.
- 3—He interests capital in the organization of a Rural Motor Express Company.
- 4—He sells trucks to this company.

Dealer associations can do much the same line of work, and every association officer, whether secretary, manager or

## How An Iowa Town Pushes Rural Motor Express



*Mason City, Iowa, has gone into the Rural Motor Express in a manner that will benefit that section and the truck trade as well. Five routes are running, varying from about 80 to more than 100 miles each. The trucks are carrying goods out to the farmers and are bringing produce in to the city people*

president, will be taking the leadership in a movement that will benefit the town's dealers if he takes the lead in this movement and gets all the dealers interested.

Sometimes it is necessary for this association officer to enlist the aid of the city's business men and secure from the Chamber of Commerce or some other source a committee that will take charge of the distribution of farm produce after it is brought into town.

Sometimes this official has to secure the capital for establishing the express companies. There is no limit to what he can do—and whatever he does along these lines is going to be a great benefit to the truck dealers and the country at large. It is a fine opportunity for each association secretary to "help win the war."

The idea was first endorsed by the Highways Transport Committee of the Council of National Defense. This com-

mittee asked the National Automobile Chamber of Commerce to help, so Samuel A. Miles, who manages the New York and Chicago automotive expositions each winter, took charge of the work, assisted by F. W. Fenn, operating the National Motor Truck Committee, with headquarters at 7 East Forty-second Street, New York City.

Miles has great masses of correspondence with dealers and others who are taking hold of the work—and he wants

other dealers to get in and help. He suggests that dealers:

1—Ask him for a cartoon poster, of which he has already sent out 30,000.

2—Secure from him copies of "Rural Motor Express Lines," of which he has already sent out 20,000.

3—Get copies of "Organization of a Rural Motor Express Line," of which he has sent out 20,000 copies.

4—Start the movement in their own home towns and call on the National Motor Truck Committee for all the advice and counsel desired.

In some sections dealers have secured copies of these booklets and mailed them to thousands of farmers, enclosing them with outgoing business letters. Other dealers have secured newspaper publicity, which is highly essential to the success of the plan, because the publicity lets the farmer know all about the express line before it starts and the express man doesn't have to waste valuable time explaining what it is.

The booklets explain fully all the details of the system, such as what to ask of the farmers when making the preliminary investigation, how to estimate the express charges, sales arguments to be used in selling the idea to the farmers, how to survey a route, number and size of trucks, advertising campaigns, operation of the service and other details.

The committee is co-operating with the State Councils of Defense in this work.

#### What Is Being Done

The Ford Livery Co. of Omaha, of which the proprietor is Warwick Saunders, has purchased three large trucks to act as pathfinders for a fleet of from 40 to 60 trucks which will operate in and out of Omaha hauling freight both ways. The Omaha Bee has taken an interest in the movement and is giving publicity to the rural express idea. Clarke G. Powell, secretary of the Omaha Automobile Trade Association, has also enlisted the interest of the trade in the movement, and the automobile men are going to get back of it.

Two lines of Rural Motor Express are in operation out of Mexico, Mo. Seven trucks are employed. The distance of one route is 35 miles and of the other 20. Two other lines are in contemplation. A wholesale grocery house in Mexico regularly delivers its goods to customers in smaller towns within a radius of thirty-five miles. One milling company calls for all grains of its farmer patrons.

Some of the business men in Pueblo, Col., are arranging for a service, and Walter Higham of that city has already started one. This service will be between Canon City and the Cripple Creek district and also between Canon City and Colorado Springs and Pueblo.

Edward L. McColgin, managing secretary of the Chamber of Commerce, Troy, N. Y., is taking the Rural Express idea up with the local county farm agent.

Two or three trucks are operating out of Chillicothe, Mo., one to Blue Mound

Rural Motor Express Lines have been endorsed by the Council of National Defense, the National Food Administration, the States Relations Service, the Chamber of Commerce of the United States, the Department of Labor, the Railroad Administration, the Highways Transport Committee, a majority of the State Councils of Defense and practically every other interested department.

and Coloma being 18 miles. It is owned by J. H. Hoyt of Dawn, Mo. He hauls in all the produce from two stores and takes back merchandise. Another route runs from Chillicothe to Springhill, 10 miles; another runs from Chillicothe to Avalon. In addition there are several men who operate special rural hauling companies.

#### Operates Between Middletown and New York

The Anderson Truck & Warehousing Co. of Middletown, N. Y., operates a daily service between New York City and Middletown with two 5-ton trucks. These carry merchandise from New York to Middletown and carry back with them manufactured articles from the Middletown industries. The route covers a distance of about 67 miles. H. Marks of Middletown also operates a 3½-ton truck between Middletown and New York, carrying from Middletown a load of produce daily. He operates over the same line as does the other concern. The Middletown people find that this truck service is a great help at a time when the railways are congested, and, although they have not operated at a very good profit, owing to accidents, etc., it is expected that the service will continue and become more profitable. Most of these companies charge about the same rate as railway express.

C. H. Bauman of Lake City, Iowa, is planning to start a 2-ton truck rural express route between Lake City and Fort Dodge, a distance of 45 miles. He has asked the committee for information as to estimating costs and operating suggestions.

The committee first gets in touch with the Highway Transport Committee of the State Council of Defense in each state, the State Committee then appoints a local representative in various sections to co-operate in the establishment of the rural motor express service. For example, William Rockwell of Denison, Iowa, requested from the committee information as to how to establish a motor express route, he having two trucks and desiring to start in that business. The committee referred Rockwell's communication to H. J. Metcalf, secretary of the Highway Transport Committee in Iowa, and Metcalf took the matter up in that state.

#### Haul in Mountain Country

L. G. Spencer, president of the L. R. Transit Co. of Lurton, Ark., hauling 100 miles from that town, said: "Our line is in a mountain country where there are no railroads and we are doing a fine

business. We shall add additional equipment and handle United States mail for twelve post offices very soon. We plan to knock the mule out completely and might be able to furnish you an interesting item later on. There are several things peculiar to our line that are not found in others."

Frank Birrer of Poughkeepsie, N. Y., plans to start a route between that city and New York, and will pick up express matter along the way. Grant W. Holmes, manager of truck sales for the Packard Motor Car Co. of Boston, states that a rural express route has been established between Portland and Bath, Me., by Joseph Coty of Freeport, Me.

One of the activities of the committee consists of sending to manufacturers a form letter which is to be transcribed on the stationery of the manufacturer and sent to his dealers. Emery Huston, second vice-president of the Lexington Motor Co., has followed this up with a request on the dealers that they report what action they have taken on the Rural Motor Express matter.

"In Tennessee," states F. W. Fenn, assistant to Samuel A. Miles, "at Chattanooga and Nashville, rural lines have been formed for long distance hauling, bringing food back to the cities. These lines take in Atlanta, Georgia, Birmingham, Ala.; Nashville, Memphis, etc. In Chattanooga the Dixie Highway Association has organized a Bureau of Efficiency for Truck Operation, a marketing committee for disposing of foodstuffs, a school for training chauffeurs for Rural Express and for the war. They have 100 students in training now.

"In Ohio things are well organized. In different points they are not only moving foodstuffs but livestock as well. I am just in receipt of a report from Chillicothe stating that they have three rural lines operating out of that city alone, carrying food into the markets and merchandise back to the farmer.

"In Kansas about 2000 sets of our literature have been sent out by the Automobile Trade Assn. of Kansas. This covered all of the automobile dealers in the state, the county farm agents, as well as others interested. Cattle and other livestock are being shipped from all points as well as foodstuffs.

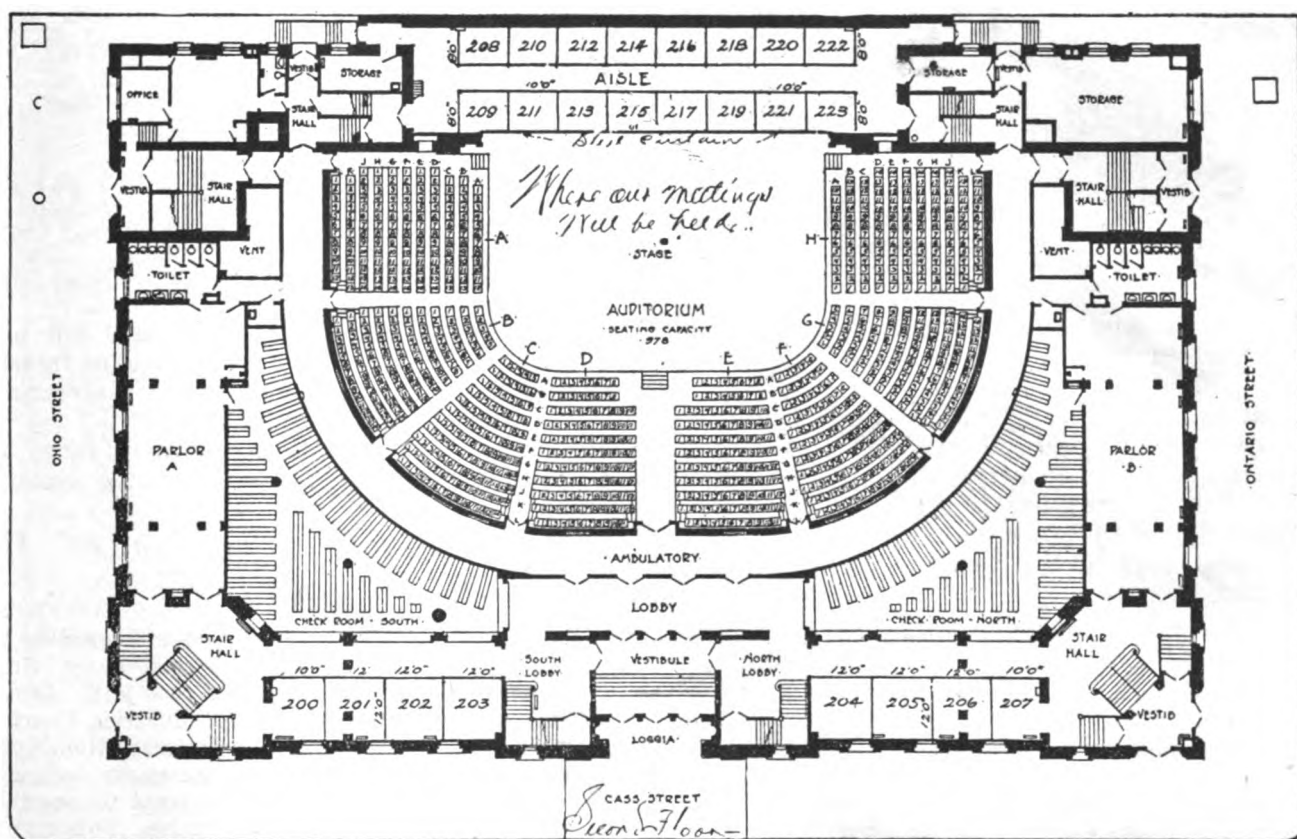
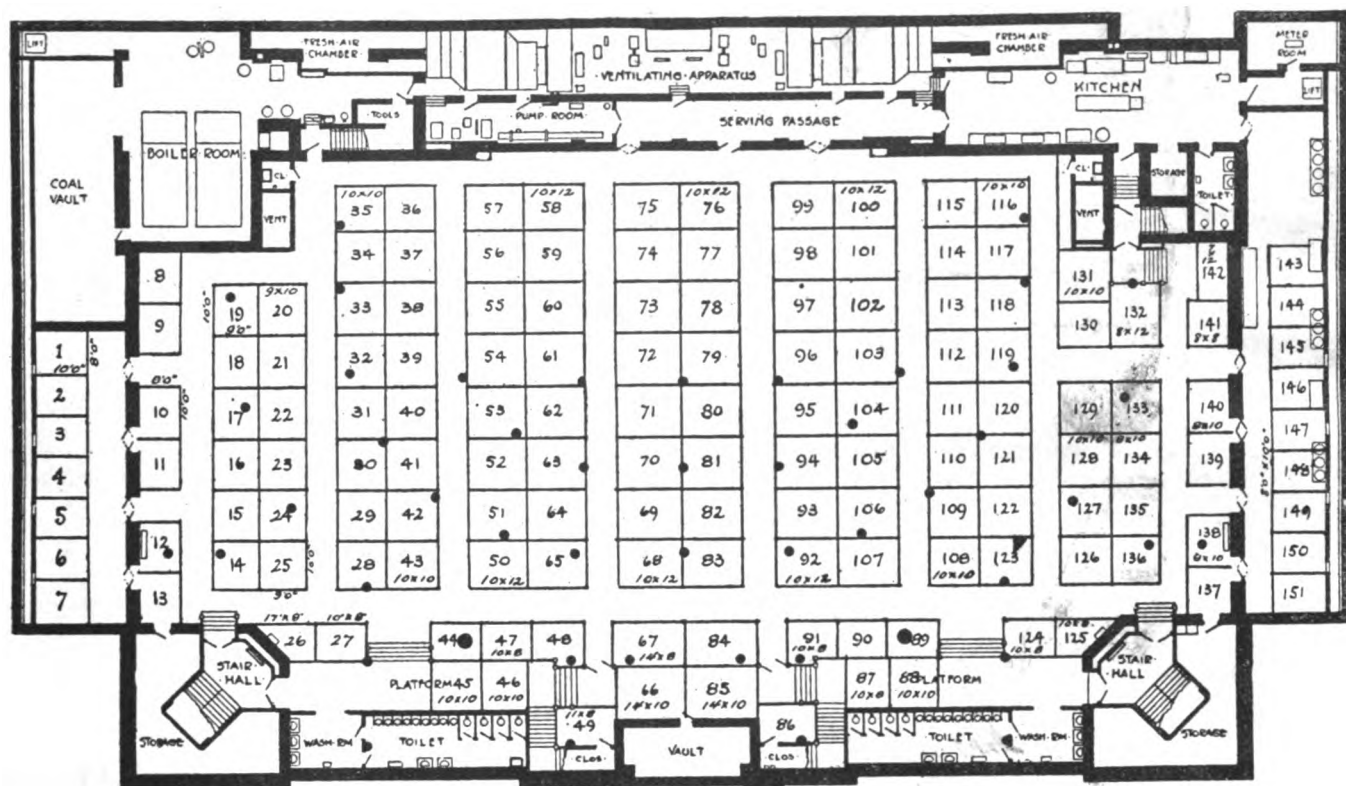
"At Key West, Fla., a large sum of money has been appropriated for laying an automobile highway from Key West to the mainland, and Rural Motor Express lines will operate over them.

"Albany, Ala., is very active in the work of organization, and developments are to be expected soon.

(Continued on page 34)



# Where Jobbers Will Hold Exhibit



These are the two floors of Medinah Temple, Chicago, where the National Association of Automobile Accessory Jobbers will hold its convention and exhibit October 28-November 2. The upper plan is the first floor and the lower plan the second floor. The exhibit and meetings will be held in the same building. The exhibit will be open daily from 9.30 to 6, with sessions during the morning



When President F. W. A. Vesper and Executive Secretary E. E. Peake of the N. A. D. A. spoke in Chicago last week on Tuesday evening between 300 and 400 dealers attended in the roof garden of the La Salle Hotel. These dealers, from Illinois and Indiana, endorsed the movement enthusiastically. The numbered men are: 1, George F. Ird, president of the Chicago Automobile Trade Association; 2, F. W. A. Vesper, president of the N. A. D. A.; 3, Thomas J. Hay, treasurer of the N. A. D. A.; 4, Bart J. Ruddle, secretary of the N. A. D. A.; 5, E. E. Peake, executive secretary of the N. A. D. A.

## Mix-Up on N.A.D.A. Conservation Plans Upsets Whole Trade

**Fuel Administration Says No One Authorized Sunday Closing—Vesper Says Plan Has Approval of Economy Board, and That Fuel Saving Is Not the Intent—Only Labor Saving—Illy Advised Newspaper Story Does Great Damage—Oil Men the Cause**

ST. LOUIS, Aug 5—A statement issued in Washington last week by officials of the Fuel Administration that the effort to close the gasoline and oil stations throughout the country had been without authority has caused considerable confusion where objections are made to the Sunday and night closing.

*This statement evidently followed the appeals made to the Fuel Administration by a minority of the oil companies. In some sections certain oil companies controlling a string of stations have announced that they would not close unless forced to do so.*

In St. Louis the gasoline stations

are closed and R. E. Lee, Commissioner to Enforce Automobile War Service Rules, named by the State Council of Defense, has been assured by the large companies that they will remain closed. This

effort has been based not on an argument that gasoline must be saved, but on the conservation of MAN POWER.

Practically every large and small industry in this community

### *Statement From Conservation Division of War Industries Board Says Little*

WASHINGTON, D. C., Aug. 5—There seems to be a serious mix-up on this conservation matter, because the oil companies, which have quite some influence, are working from one angle while the Conservation Division of the War Industries Board, with which Vesper conferred in preparing the recommendations, is working from another.

The announcement regarding there being no authorization of Sunday closing was a direct joint statement from the War Industries Board and the Fuel Administration. Until they can straighten it out among themselves it will not be possible to get anything definite. This may take several days.

(Continued on page 37)

# How Dealers Are Supporting the N. A. D. A.

**WE HAVE ENLISTED TO HELP WIN THIS WAR**  
Needs Expert Mechanics—Will You Help Release Them?

**Motor Car Owners Please Take Notice!**  
We Have Enlisted To HELP WIN THIS WAR

**Notice to all Motor Car Users**  
Your Government requests the Regulations outlined below: These in Kansas City July 1, 1918.

**You Can't Take Chances with Your Tires and Inner Tubes after TODAY!**  
Because—Every Motorist in Kansas City, Beginning Monday, July 1, Must Observe War Service Regulations

**NOTICE TO THE PUBLIC**  
All Tire Service Stations On and After July 7 Will Be Closed On Sundays and At Night After 6:00 P. M.

**WAR TIME SERVICE POLICY**

**The War Service Committee OF THE National Automobile Dealers Association**  
At the Request of the War Economy Board (Conservation Division) Council of National Defense

has made the following recommendations:

1. Elimination of free and unnecessary service.
2. Discontinuation of Sunday and holiday service.
3. Discontinuation of night service.
4. Education of mechanics.
5. Put business on a cash basis.
6. Education of owners to do minor repairs.
7. Elimination of waste.

**THIS DEALER IS COMPLYING WITH THESE RECOMMENDATIONS**

THE MILWAUKEE COUNTY COUNCIL OF DEFENSE heartily endorses the spirit of war-time economy as evidenced by this dealer and asks for him the help of the public in his endeavor to save man-power and material.

Milwaukee, July 10, 1918

**CLOSED TIGHT—**  
AFTER 6 P. M.

**Are You going to chance Spark-Plus Trouble after TODAY?**

**MOTORISTS--REMEMBER**  
That all dealers in automobiles...  
...and they remain closed...  
...SUNDAYS AND HOLIDAYS ALL DAY!

*These are but a few of the many posters and advertisements that have been sent to MOTOR WORLD from cities where dealers have got behind the War Service recommendations of the N. A. D. A. Most of the posters are in red and blue on white paper and show full co-operation of the dealers in each section. Most of them are half-sheet size*

is begging for labor and the big companies, whether oil or something else, are cutting their service to the bone to release men for other work or to save their present diminishing forces so that they will not unnecessarily enter into

competition with other industries for the rapidly dwindling supply of labor.

This has been the view of President Vesper from the beginning. MAN POWER has been the problem with him. He has admitted

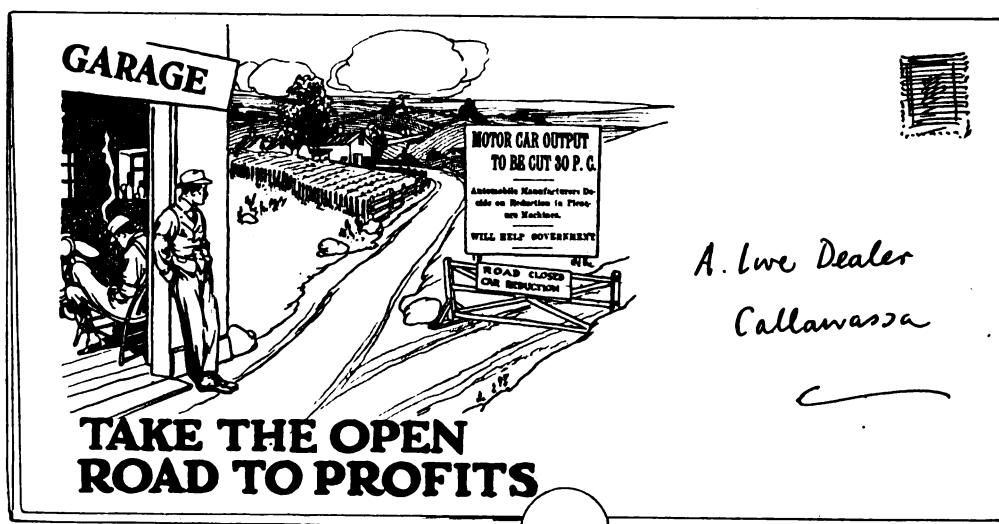
from the beginning that his committee could not force any oil station or garage to close, but, whenever he has appealed to a large employer of labor, that employer has realized the gravity of the situa-

(Continued on page 35)

# Enlisting the Dealer

## In the Farm Electric Light Campaign

The Story of How Western Electric Has  
Pinned Its Faith to the Automotive Dealer



*This picture, on the face of a folder that is mailed to dealers,  
keynotes the whole selling campaign*

**G**ARAGE owners and small-town car dealers are at present the objective of a determined "drive" on the part of the Western Electric Co., Inc., in the eastern section of Pennsylvania, through E. L. Hawkins, manager of the light and power division of that concern, with headquarters in the Philadelphia office at York and Eleventh streets.

The company feels that the garageman, by which is meant in this case the country automobile dealer, is the logical person to act as salesman for electrical appliances to lighten labor on the farm.

Reasons why the garageman is particularly adapted to this business of disseminating "twenty-four-hour sunshine" on the farm are cited as follows:

*It is a line of business with which the garageman is considerably familiar and the two lines are closely allied.*

*Farm-lighting systems are like overgrown automobile lighting systems, virtually identical in principle.*

*The garageman is primarily a good mechanic.*

*He either gets around frequently in a motor car or is in immediate touch with those who do and thus can keep track of his trade. When he doesn't go to prospects they usually come to him. Nearly every prosperous farmer in eastern Pennsylvania has some kind of motor car and usually a first-class automobile.*

*The garageman ordinarily makes a good salesman, for he is used to selling service and accessories.*

**T**HIS is how the Western Electric is proceeding in its campaign to enlist the garage owner's aid:

Advertisements are inserted in a selected list of newspapers and class publications likely to be read by garagemen, telling just enough about the sales agency plan to stimulate interest. At the bottom of each advertisement is a

form to be torn out and mailed to the company. The form reads as follows:

"I am interested in learning more about your sales agency proposition and how I can sell the Western Electric power and light."

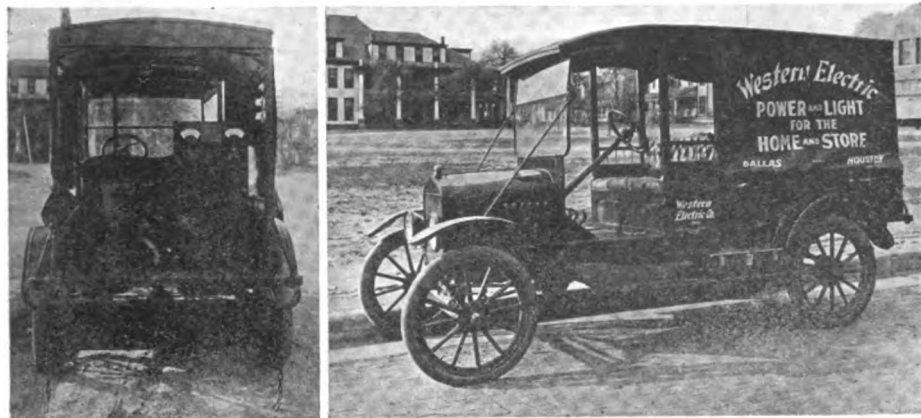
Of course there is the usual dotted line for the signature.

The advertisements proper that are

used to reach the prospect, either directly or through a dealer or sub-dealer, are double-column electros of varying length, best results having come from the two-column display idea. Most of these advertisements have enough uniformity in general plan to give character to a series.

If replies come from a territory where





*The Western Electric Co. recommends to the dealers it is establishing in Eastern Pennsylvania that they mount their demonstrating apparatus in a Ford car and carry it to the farmer, so he can see the electric light burning in his own home*

the company has an especially good dealer the applicant receives in a day or so a quantity of pamphlets setting forth the excellence of the farm lighting system and whatever arguments are deemed best to induce him to sell. Then a letter is sent, telling the applicant that the company already has a capable dealer in that territory, adding that the dealer will call and that many advantages are to be derived through becoming a sub-dealer. A carbon copy of the letter is then sent to the dealer, with instructions to call and try to get the applicant as a sub-dealer.

When inquiries come from a section where the company has no dealer or expects to make a change because the dealer is not "up to the notch," the copy of the company's letter replying to the applicant is given to a commercial traveler for the house covering that district, and the traveling salesman, instead of the dealer, makes the call on the prospect.

In this way the new dealer or sub-dealer prospect becomes more or less familiar with the requirements and can soon decide whether he wishes to take up the proposition.

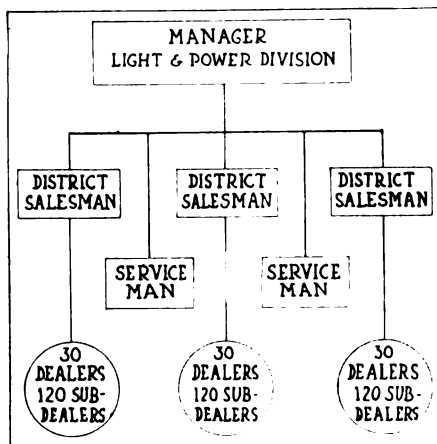
#### Attracting Garage Owners

One of the methods used either to attract a garage owner or to follow him up after his attention has been attracted by other means is an advertising folder, 11 x 16 1/4 in., one portion of which is a detachable postal card to be remailed to the company. The reverse side of the card contains the same wording as that of the magazine advertisement already mentioned.

On the front of the folder, which creases into an oblong for mailing, 11 x 5 1/2 in., is a suggestive cut of two somewhat disconsolate looking garagemen in the doorway of their shop, labeled prominently "Garage," one smoking while seated in a semi-torpor and the other idly standing, hands in pockets, gazing down the vacant roadway. In front is a gate bearing the legend, "Road Closed; Car Reduction," while just above is a box reading: "Motor Car Output to Be Cut 30 Per Cent. Automobile Manufac-

turers Decide on Reduction in Pleasure Machines. Will Help Government."

Of course, the text is changed according to appropriateness and season. This is but a sample of how it is done. But



This diagram shows the interdependence of the plan at a glance. The fountain head is the manager of the light and power division of the company at headquarters in Philadelphia. In each district there is a salesman whose duties are self-evident and need no elaborate explanation. It is the district man's business to see that he has a dealer for every county in his district and that each of these representatives is kept selling up to his full quota. The district man is in the company's employ, of course, while the county dealer works on a commission basis. Each county dealer has four sub-dealers, or gets them as soon as possible, and as there are 30 dealers, there are, of course, 120 sub-dealers. The service man is primarily a "trouble" man. He goes about inspecting the plants, looking for symptoms of disorder and correcting them. He is both a doctor and the guardian of the good name of the power and light plant. Just now there are "two of him" for the three districts in the eastern section of Pennsylvania. The service man also is an instructor and tells all new dealers about installation and the points about the mechanism that it is necessary for them to learn as working basis.



the legend beneath this touching little sketch, in bold type, is applicable most any time. It says: "Take the Open Road to Profits."

The inside of the circular—for this is what it really is, though printed on calendered pasteboard—is attractively arranged, showing, in addition to persuasive copy, a large halftone of the farmer's daughter switching on the power in the basement of her home—"with a simple twist of the wrist," apparently, while her little brother looks on and reaches up in delight. Centered is a halftone, vignettted, of the automatic regulator of the power plant, showing its mechanism prominently displayed. The prospect is told he can readily sell these outfits, for the farmers need them. Next the postcard section is the suggestive pointer: "What if your sales of cars are falling off? You MUST keep on doing business at a profit. Mail this card and learn how you can sell Western Electric Power and Light."

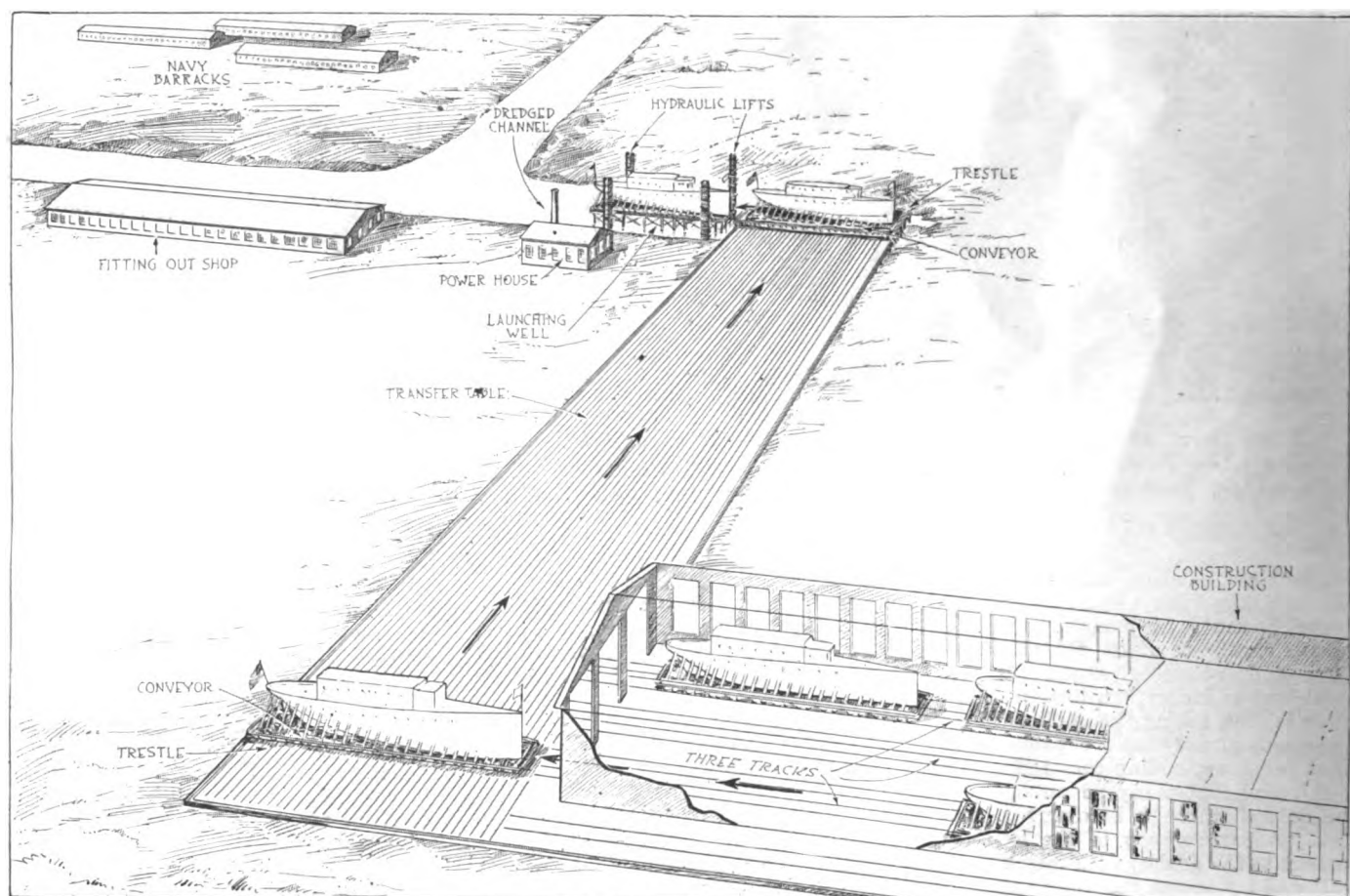
And a long list in the company's ledger shows that garagemen have mailed this card and been sold.

#### Each Owner Must Buy for Himself

Each garage owner in a county district is obliged, under the agreement, to buy for himself and for demonstrating purposes one of the company's isolated plants. It is regarded as a most necessary arrangement and really helps the garageman to sell, as well as proving of great benefit to himself in his business already established. The Western Electric Co. not only allows the garage owner a special dealer's price for the plant, but he is allowed to pay that price on the easiest possible plan—that of ten payments. In this way he can settle for his plant on commission, have virtually no investment and he can be earning money with the device while still paying for it, being more than reimbursed for his operating costs through what he takes in from charging batteries and so on.

By way of introduction, it might be well for the garage owner looking for some such proposition as that of the

(Continued on page 44)



Sketch showing the course the Eagles must take before reaching the water. From the large construction building an Eagle is brought out onto a trestle-like device operated by electricity and carried along sideways until it reaches other tracks on the launching table. After being pulled on this table the boat is lowered by means of hydraulic power. The area called the transfer table measures about 240 x 500 ft. and has on the floor sixteen single railroad tracks on which rides the trestle-like construction that carries the Eagles to the launching well

# Here's How Ford Is Building Eagles

*Submarine Chasers Go Through the Plant on the Same  
Progressive Plan as Do the Cars—If the Kaiser  
Could See It He Would Worry*

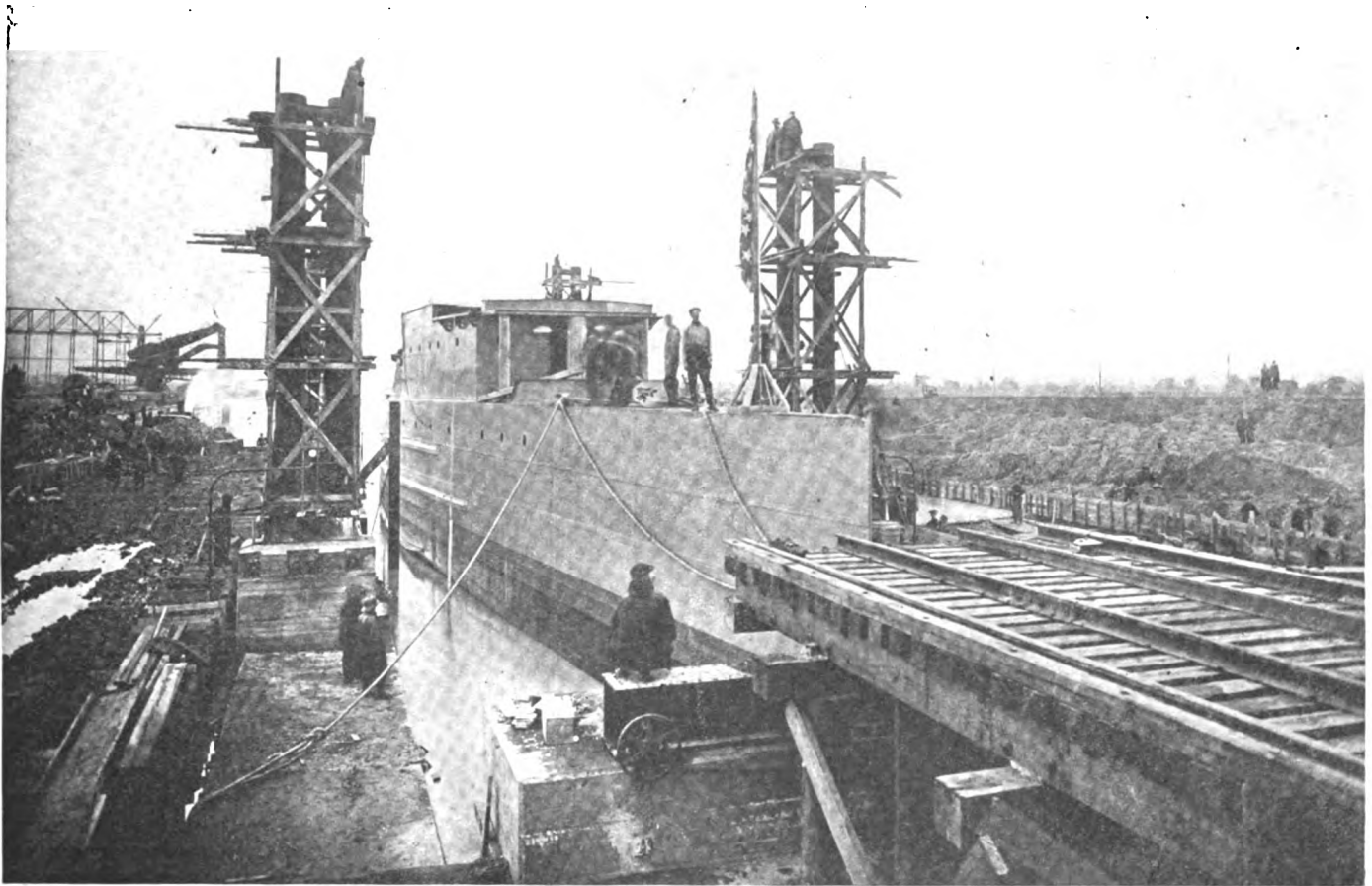
**W**HEN Henry Ford took the contract to build the submarine chasers known as the Eagle boats, and stated that he would meet a production schedule of one per day, it was immediately concluded that new methods would play an important part in arranging for this production.

The methods employed have come to light with the launching of the first of the Eagles. Ford has put the same underlying principles used in his automobile plant to work in the production of these boats, with the result that he has revolutionized the industry. Ford does not build boats; he is manufacturing them. The illustrations on this page show how the work is handled. The exact details are not given, neither are the drawings to scale, as it would not be advisable to print them; nevertheless, sufficient is given to show the fundamentals.

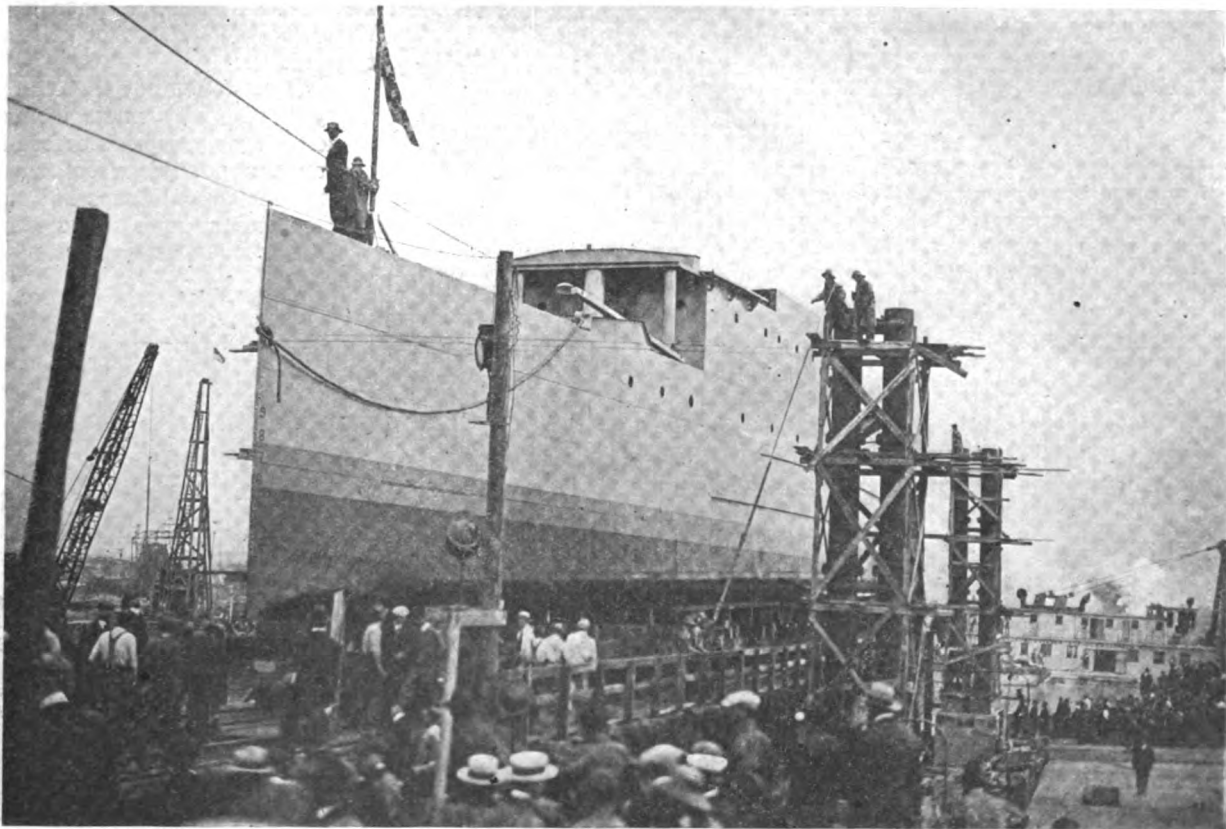
Under the Ford system, production is a straight line proposition from the time the keel is laid until the boat

is launched from the hydraulic elevator. The boats are manufactured in a long building capable of carrying three abreast. The manufacturing operations are carried on while the boats are on the cars, and these cars pass along as various operations are completed, until, when the boat is ready for launching, the end of the building is reached. The car, together with the boat upon it, is then carried out to the end of the launching pier.

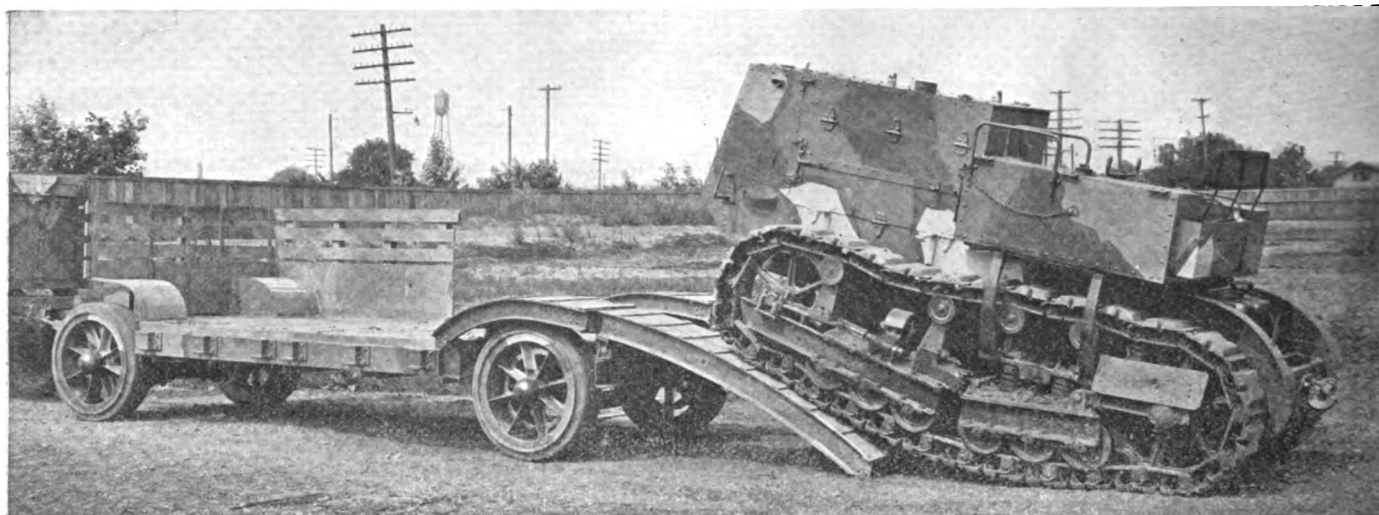
The launching is not done in the conventional manner. There are no launching calculations to make, and the engineers of the yard do not stand with their hearts in their mouths waiting to see that the boat slides off the ways properly and that there have been no mistakes in the launching calculations. Instead, the end of the launching pier is a hydraulic elevator which gently lowers the boat into the water, lets it float off the car, and then rises to allow the car to be returned to the end of the building for the starting of another boat.



*The Eagle-1 was floated at 6.55 p. m. The end of the launching pier is a hydraulic elevator which gently lowers the boat into the water, lets it float off the car and then rises to allow the car to be returned to the end of the building*



*The first Eagle before it took its dip into the waters of River Rouge, July 11, at Ford's shipbuilding plant. With hardly a hitch, the 200-ft. boat was brought out of its housing and lowered into the water*



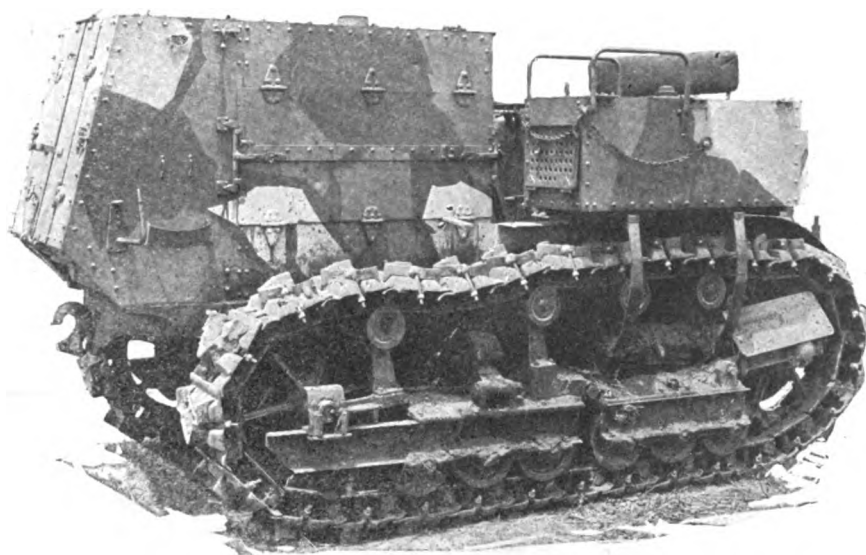
*Five-ton creeper type of tractor mounting a 10-ton trailer on the special ramps provided for the purpose*

## War Demands Odd Vehicles

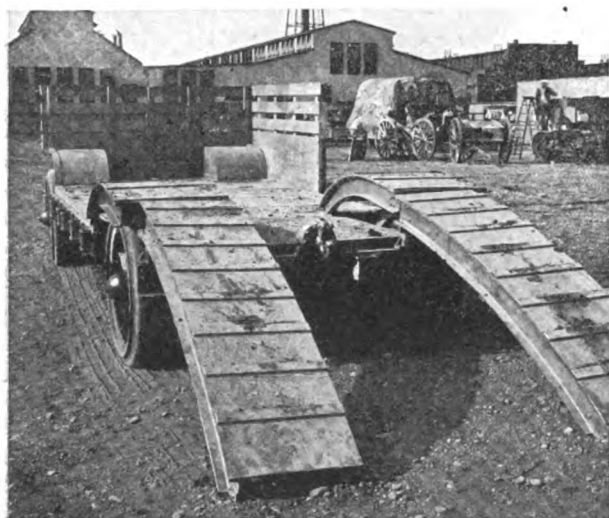
**T**HE peculiar demands of war work, particularly in the Ordnance and Signal Corps, and the rapid development of motorized equipment, are combining to produce some rapid developments in the trailer manufacturing industry.

An unwieldy piece of mechanism which, although mounted upon wheels, is incapable of traveling more than 6 or 8 m.p.h., can be mounted upon a trailer and transported at two or three times that speed.

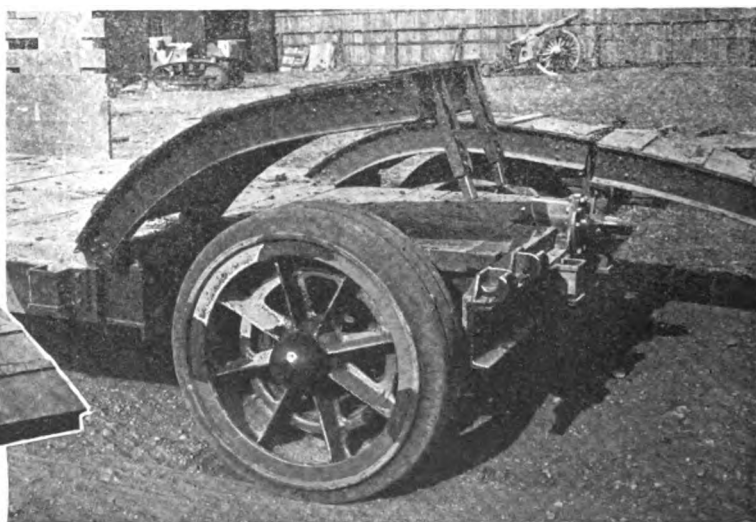
There is no doubt but that the trailer industry is now only in its infancy and has much bigger prospects before it than would appear possible from superficial thought. The Signal Corps and the Ordnance Department have placed orders for tens of thousands of trailers of varied designs.



*Five-ton armored tractor which is typical of the type of vehicle which can be more rapidly and efficiently transported over good roads on a trailer, but which is capable under its own power of negotiating very difficult conditions of traction*



*Loading ramps which are carried as part of the equipment of the 10-ton trailer*



*Method of providing wheel guards over trailer to protect wheels from damage in loading and unloading*



# SCOUTING FOR TRUCK SALES

By Ray W. Sherman

"—and now," Reilly concluded, "we're going to add a new branch to our truck sales organization."

The two young men who were helping C. J. Reilly, Inc., in putting the Sayanna truck on the market in Callawassa looked at the boss and at one another. And they stole side-wise glances at Tommy Trumbull, as though they would glean from his bland countenance some hint as to what was to happen to the truck sales organization of which they were the sole members.

"We're going to put on another man," Reilly said, as he drew from his desk a sheet of paper on which seemed to be a rather lengthy list of names. "And," he hastily assured, "we hope later we can put on still more men and have a much larger organization than we have now. You boys are doing nicely, but you can get only a certain amount of business. We've got to have more business. We're going to hop this Sayanna thing over in this territory until people who think of trucks think of our trucks."

## Get a Missionary Man

"Fine!" ejaculated Eddie June, who was the star truck man to date.

"What we're going to do is this," Reilly explained. "We're going to put on a new man for what we might call development work. He's going on salary, for a starter, and what arrangement we'll make later we don't know yet. We're putting him on salary because he probably won't make a great many sales for some time to come. If he builds a good sales business we may raise his salary or put him on commission. I don't know which."

"But, anyway, here's what he's going to do: He's going to be a missionary man. He is going to develop lines of sales that are not yet developed. He is going to make openings in various trades and businesses that are not yet using trucks very freely, and after he gets the wedge started you boys will get in and increase the opening he has made. He is going to be a help to your own sales rather than cut into them."

"That sounds reasonable," agreed June.

"The point is this: The truck business is only beginning to open up. We haven't scratched it yet. This means that there are many uses for the truck that future users haven't discovered yet, so we've got to get out into the field and find what trucks can do for people—and then sell 'em the trucks."

"Once we get this work started the rest of you boys can imitate the missionary man. He will make a thorough study of how to break the truck into new fields and show the rest of you boys the best ways to do it. He is going to go along ahead of the squad and find out places

where you can jump in with best results. He will study methods while you boys go after results. We'll have lots of sales meetings in connection with the work and give every man the benefit of every other man's ideas."

"Great!" said June.

## Sell to Farmers

"For example," continued Reilly, "we have been trying to sell trucks to farmers, but we haven't been making the headway we should. The reason is that

## Will YOU

*write us a letter about an important and often overlooked point in truck selling that you think should be brought to the attention of truck dealers?*

the farmer is a wary buyer. He isn't going to part with any of his hard earned money unless he can be shown a good reason for so doing. If he can be shown the reason he is generally eager to buy.

"The thing we haven't been able to do is show him the reasons, because we have not been able to dig into his business and find out just what a truck can do for him. That takes time, and we have used our time selling trucks where we knew they could be sold. Our sales force has been small and we have had to dig in where we were moderately sure results could be secured with a minimum of effort."

"But now we've got to expand and get additional business. This new man will get right out into the country for a starter and learn all about farming and what work there is on farms that trucks can do. Once he gets a lot of information like this lined up he can sell a few trucks himself and—most important yet—can show you boys just what tack to take when you go after farm business."

"We shall also complete a good list of farmer prospects and follow them up from this office with a good line of sales letters and literature. We're going to make this a real co-operating organization. We'll have scouts, supply departments and trench fighters—and with the whole works going in the same direction I figure we'll get some fine business out of this territory."

## Will Study All Trades

"The missionary man will also make a study of city trucking conditions. He will learn if there are certain trades that are not now using trucks. He will then investigate to learn whether trucks can

be used there to advantage, and what sizes of truck. After he has found a trade that possesses possibilities he will find out how best to sell trucks to that trade, and you boys will go after that trade as part of a campaign."

"We'll have literature for this particular trade. We'll list everybody in it, and we'll concentrate on selected lists."

"Supposing the scout finds that the undertakers are mostly using horse drawn apparatus and that they ought to be motorized. He will next find what kinds of vehicle are needed and will give you boys a line of information that will help you when you walk into an undertaker's office and lay the proposition before him."

"Rural express," suggested June.

"Surest thing you know!" Reilly declared, as he banged the desk with his hand. "We're going after it hard. This scout boy will find where rural express routes can be run to advantage, he'll figure out the cost and rates and other data, and suggest ways and means for getting some Sayanna trucks running in that service around Callawassa. Once he gives us good leads like that we'll follow them up here and do everything we can to find the capital and men for financing these routes."

## Big Advertising Asset

"You see," Reilly added, "every time we get into a new trade with three or four trucks it is going to be a big advertising asset. If we can put ten trucks out on the farms around Callawassa the farmers everywhere are going to think a lot of the Sayanna truck. They will KNOW it is a good truck because they know some other farmer who uses one."

"In rural express work the man who thinks of engaging in that trade will naturally think favorably of a truck that has proved itself satisfactory in that service. You buy Hempen shirts and Wander shoes because some friend of yours has found them satisfactory and not because they are so much better than any other goods. It's the same with all merchandise. You buy what you know is good without taking the time to investigate the whole field and find what is best."

"I would rather have six trucks in each of ten trades than eighty trucks in one trade. The eighty would advertise my truck as a one-side truck, while the sixty would advertise it as an all-trade truck and that field is unlimited."

"When does the boy scout begin?" laughed June.

"As soon as the scout master gets one." And Reilly laughingly put the whole job up to Tommy Trumbull, who every day got nearer and nearer to being manager of the whole Reilly works.

# Putting Service Department on Cash Basis

Editor Motor World: HERE'S A PLAN THAT WILL ENABLE A DEALER TO PUT HIS SERVICE DEPARTMENT ON A CASH BASIS:

Early in the year we found, upon going over the books, that we had several thousands of dollars tied up in accounts that were anywhere from two months to a year past due.

These accounts were for parts, repair work, etc. In many cases it seemed next to impossible to get a settlement because those owing us claimed that so and so, now at the front, said thus and so. In other cases no attention was paid to repeated statements.

As a final step, it was decided to place all accounts in the hands of a collection agency. Immediately replies, checks and patrons started to pour into the office.

Mr. Strong made it a point to interview each man personally, to read and answer all protests. As the result of the information gained he decided it was better to go on a strictly cash basis, so the enclosed letter, marked No. 1, was sent out.

Of course there were protests, but it was better than the old charge plan. Experience showed that it was not always convenient for car owners to pay cash, so the cash card system was devised.

First, read letter marked No. 2. Then study the card itself.

The plan has worked like a charm. Many prefer to pay cash as the work

is done—more prefer to buy a cash card. Everybody seems better satisfied. Dispute over bills has been done away with entirely.

You can make any use of this plan you see fit.

At first glance, 10 per cent seems quite a liberal discount. But before you reject the plan on this account consider that you have your money months in advance in many cases.—STRONG MOTORS, INC., Rochester, N. Y.

## Letter No. 1

War times, as you know, have made it necessary to change methods in all lines of business.

We, like all other automobile dealers, are forced to go on a strictly cash basis—that is, all charges for work and materials must be paid upon delivery of the car.

This action is not a reflection in any way on your credit but is absolutely necessary if we are to continue giving the satisfactory service we have always tried to give; furthermore, we believe this change will be more to your interest than to ours.

If you feel it is going to cause you any inconvenience, or if you believe there is any reason on earth why you should not accept these conditions, wish you would come in and talk it over with me.

Don't wait until you send your car in here to have some work done and then attempt to argue it out with an employee, because good employees, like good soldiers, must obey orders.

Thank you.

Yours truly,  
STRONG MOTORS, INC.

## Letter No. 2

A trial of nearly two months convinces us that the "cash when car is delivered plan" is far better for our friends and ourselves than the old credit system.

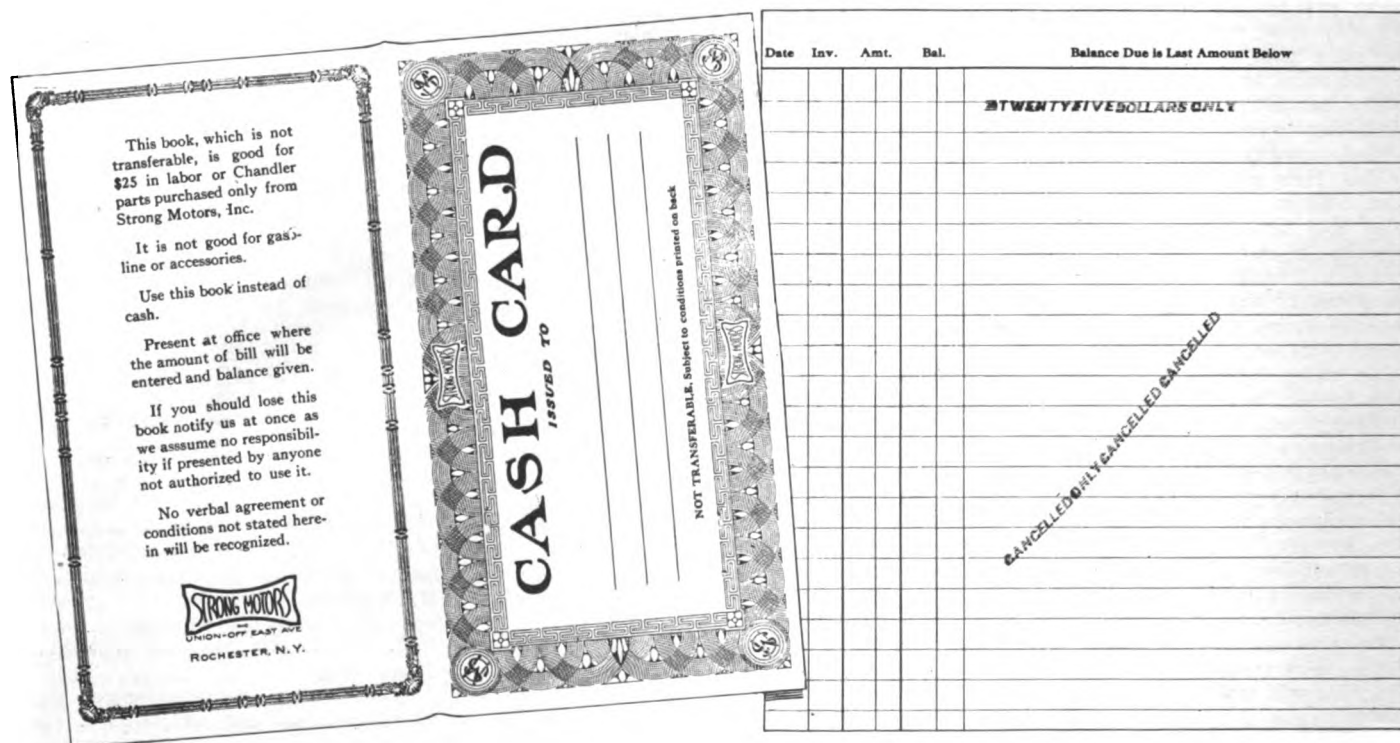
It does away with all differences which result from trying to settle a bill contracted weeks before. It does away with all errors in bookkeeping because there is no bookkeeping.

It keeps us good friends with all of

our customers and eliminates misunderstandings that arise from differences of opinion that may have existed between our customers and employees who have gone to the front.

Under the new system the work is done, inspected, accepted and paid for on the spot and everybody is happy.

The only hitch in the plan is in those cases where owners send chauffeurs or members of the family for a



Cash card, good for \$25 in labor, issued by the Strong Motors, Inc. On the right is shown the blank on which is entered the amount of the bill

car and the chauffeur, or member of the family, doesn't have the necessary change.

To overcome this objection we have issued a card so arranged that work can be credited as done. All you have to do is to give your chauffeur or whoever comes for the car, this card. The cost of the work will be entered on the card and deducted from the balance and a new balance struck.

Under this plan you know exactly how much is due you at all times.

The card is good for \$25 in work and materials.

In view of the fact that you pay in advance by taking a card, we allow a discount of 10 per cent, making the card cost you \$22.50.

If you would like a card, sample of which we enclose, send us your check for \$22.50 or call at the office the next time you bring in your car.

Sincerely yours,

STRONG MOTORS, INC.

P. S.—At present our charge for labor is 90 cents an hour. Those who buy cash books now, taking the 10 per cent discount into consideration, enjoy a rate of 81 cents an hour. In the event of an advance, which conditions may compel us to make, holders of cash books will save 10 per cent from regular rates.

P. S. No. 2—Prices on parts advanced 10 per cent April 1st.

#### Oil Inspectors Wanted

WASHINGTON, Aug. 3—The Bureau of Oil and Natural Gas Conservation, United States Fuel Administration, needs the services of six field inspectors, whose work will consist of visiting oil and gas-producing localities to ascertain the condition of wastage of oil and gas. The bureau also desires the services of eight fuel oil combustion engineers. As far as possible, all are desired to volunteer their services to the Government during the period of the war, but if this is not possible, a fair remuneration together with the necessary expenses will be paid. Only men having had experience in these respective lines need make application.

#### Develop "Liberty Aero Oil"

WASHINGTON, Aug. 3—Development of a new aircraft engine oil to be known as the "Liberty Aero Oil" to be used in the Liberty engine and all stationary cylinder aircraft engines by the Army and Navy, was announced to-day by the Department of Military Aeronautics. The new oil is a mineral oil. It is stated that the new oil will be available in quantities sufficient to meet our airplane needs, and that it will cost about 75 cents per gallon. Plans have also been completed and placed in operation for the reclamation of used oil, and at least 50 per cent is used again under the scheme devised. It is estimated that our airplane program will call for at least 5,000,000 gal. of lubricating oil, and that since castor oil costs \$3 per gallon Captain May's experiments will save the Government at least \$11,000,000.

# Gasoline

Will Help  
Win the War

## Don't Waste A Drop!

Our own Government and our Allies are using tremendous quantities of gasoline for war purposes. The need increases every day as more motor trucks, more airplanes, more U-boat chasers, more motorcycles, more army dispatch cars, more tanks, more tractors and more of other gasoline-using war machines are built and put into service.

Every gallon of gasoline this country can produce must perform some useful function in helping to win the war for America and the world. *Don't waste it—don't be extravagant in its use. Save all you can—See that other people conserve it.*

A united effort to reduce all waste of gasoline will serve the Allied Cause, as well as bring a personal benefit to you in the more economical operation of your car.

### OBSERVE THESE RULES IN OPERATING YOUR CAR

1. Check for leaks and tighten as needed. To report no leaks, battery will be recharged.
2. Do not overfill. Gasoline will overflow and evaporate, making a fire hazard.
3. Do not pump gas too fast. Pumping too fast causes air to enter the tank.
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OAKLAND MOTOR CAR COMPANY  
PORTLAND, OREGON

**THE** Oakland Motor Car Co. has started a campaign for gasoline conservation. The company has sent out 10,000 colored posters, five to each dealer, who will hang them in his own place of business and send a few to public buildings in his city or town. It is the company's aim to have these posters hung in all garages and service stations. A number have been sent to the National Automobile Chamber of Commerce. The company's branches and distributors will receive more generous supplies

#### New York Association Elects Members

NEW YORK, Aug. 3—At a recent meeting of the board of directors of the Automobile Dealers' Association, Inc., ten new firms were elected to membership: Chalmers Sales Co., Inc., Crow Motor Co. of New York, Moon Motor Car Co., Lexington Motor Co. of New York, Glidden Motor Sales Co. & Sup., Owen-Magnetic Motor Sales Corp., Paige-Detroit Co. of New York, Taylor Motor Corp., Chevrolet Motor Co. and Chas. E. Miller. The election of these new members gives the association the largest membership that it has had since it was organized in 1910.

#### Canadian Gray Tractor Dealer

WINNIPEG, Aug. 3—Gray tractors, manufactured by the Gray Tractor Co. Minneapolis, are now being sold in western Canada by the Gray Tractor Co. of Canada, Winnipeg. Stocks are now being carried at Winnipeg and Calgary, also a full line of repairs will be put in so that dealers will be assured prompt service. Representatives will shortly be appointed for distribution in Saskatchewan territory, where a warehouse and stock will be installed. The Gray Tractor Co. of Canada is now addressing its selling proposition to implement dealers throughout the west.

# SCIENTIFIC CONSTRUCTION

GARAGES

SHOWROOMS

REPAIRSHOPS

We shall be glad to draw a plan for you or give you any other aid in your building, free of charge. But be sure to send full details, including a sketch of the plot, showing position of streets

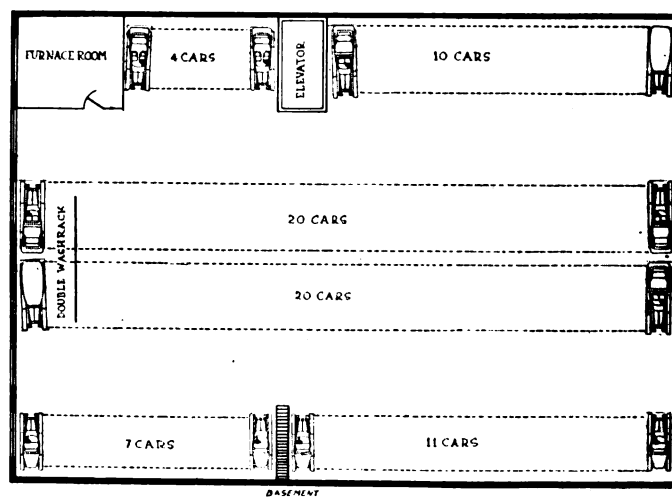
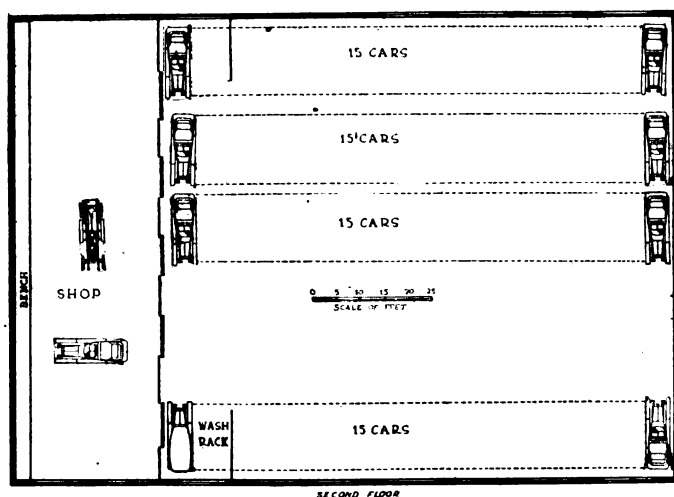
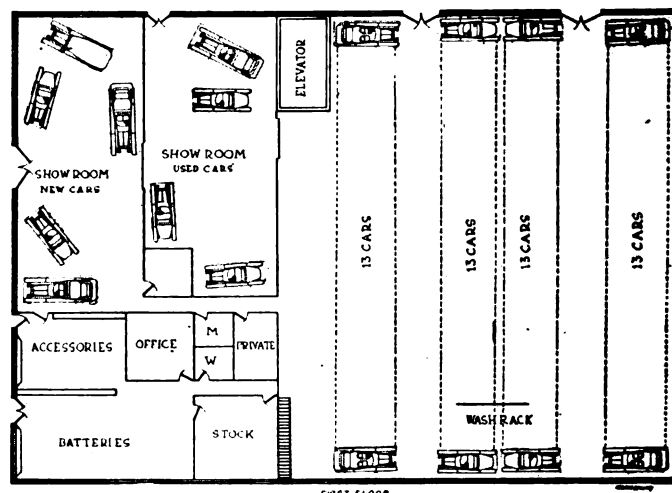
## Two-Story Plant

Editor Motor World: We are inclosing blueprint of a site which we have purchased with the object in view of erecting a new garage. Location is a corner on main business street in the heart of the city, 99.75 x 140.25.

We are planning on building a two-story and basement fireproof building on entire frontage about 132 ft. deep, with an accessory store in front next inner wall, the balance of the frontage to be used for new car salesroom, general office, two private offices, lavatory and three salesmen's desks.

Would you advise a high ceiling and low windows for salesroom and, if so, would you place offices in rear on sales-

*Plan of first floor of two story and basement garage for Frank E. Hathaway*



*Both the second floor and the basement of the Hathaway garage are used almost entirely for storage purposes*

room floor or have a mezzanine floor and place all or part thereon?

We propose to place an up-to-date service department with everything to facilitate this work on the second floor, where our parts department will also be located.

On which floor would you advise locating battery department, tire department, oil and grease? The basement, that portion of ground floor not used by accessory store and new car salesroom or for any other purpose, and part of second floor will be used for car storage.

Kindly show best storage arrangement. Would you advise used-car salesroom and, if so, where would you locate it?

You will note elevation on side street

is up grade so cars can be run over entrance slightly down grade on ground floor. With an entrance next to alley on side street, cars could be run slightly up grade on second floor.

The alley in rear of the building runs down grade so cars for basement could be run through entrance next inner wall, slightly down grade on basement floor. Would you advise such entrance arrangement and, if so, would you also advise elevator?

We plan to have this garage modern in every way and any plans or suggestions you can offer as to the style of building, building material, interior finish and general lay-out will be greatly appreciated.

Muskegon has a population of approximately 50,000, and we have three and

one-half counties as direct dealers for Dodge Brothers and Paige-Detroit cars. How much of an investment do you believe our territory should warrant in site and building as compared with other successful dealers in similar territory.—Frank E. Hathaway, Inc.

Here is a plan drawn according to your specifications.

If you will examine the contour of your plot closely you will find that since the ground level at the rear is several feet above the first floor level a ramp to the basement would take up too much space.

Unless you are planning to do a large garage business your building is too big. A one-story structure should be ample for car and accessory sales, or perhaps a two-story building on half the plot.



There are several questions in your letter which are answered by the plan herewith.

### *An Unusual Lay-Out*

Editor Motor World: Am enclosing herein rough sketch of our plans for new building. The lot is 100 x 100, with an alley in the rear and on the north side.

You will note that we have made provision for a drive-in filling station and are putting the building back 20 ft. from the sidewalk.

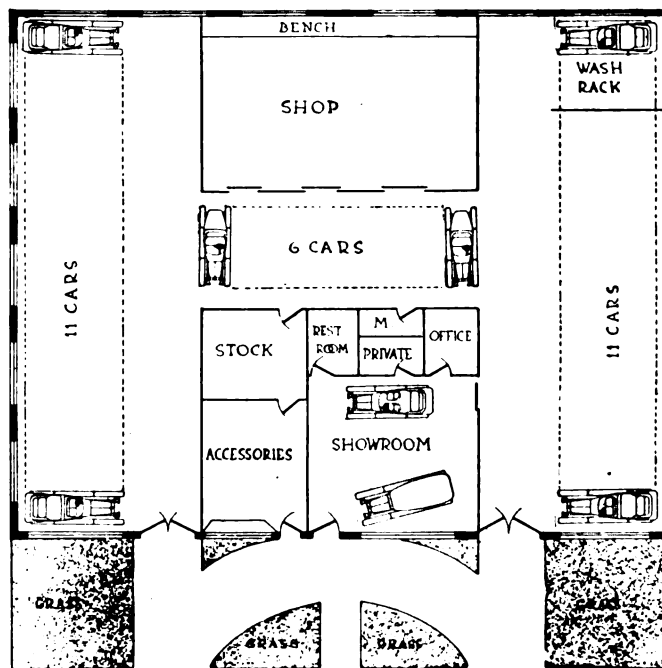
Would greatly appreciate any suggestions or improvements you can offer for this plan.—Southland Motor & Truck Co., by Harry B. Mummert, Paris, Texas.

The details of your plan are a little vague, but we believe that we are making no mistake when we say that it is a layout that you will not be satisfied with. The main objection is that the space is not utilized to best advantage.

We are printing a plan in which the main features of your plan are incorporated and at the same time waste space is reduced to a minimum.

The grass and flowers at the front are excellent. You will note that in our design the plots are symmetrical, a detail which will greatly improve the appearance of the front.

*This design provides for an unusual kind of entrance, and the lay-out should be very satisfactory*



No side entrance to the garage is indicated, but there is no reason why such an entrance cannot be placed at any convenient point.

The space between the storeroom and shop unit may be packed full of cars at night. In the daytime this space may be used as an aisleway leading to the shop.

## *Fairbanks-Morse Light Farm Lighting and Power Plant*

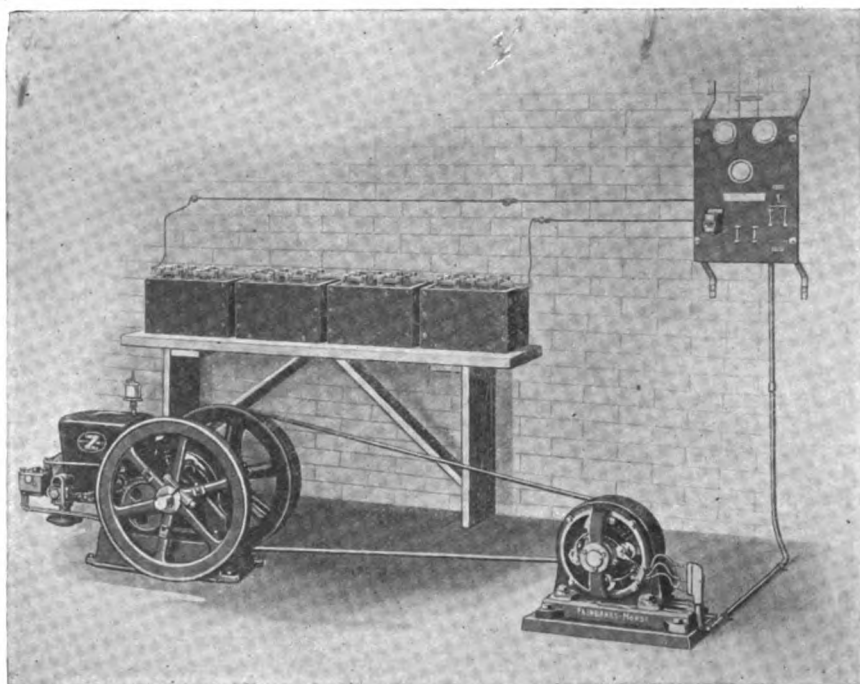
A FEATURE of the Type F 50 light plant made by Fairbanks-Morse & Co., Chicago, is that the generator is separate from the engine and is belt-driven from it. This permits using the engine for other power purposes while the battery is being charged. The complete plant consists of a type Z, 3-hp. Fairbanks-Morse engine, generator, switchboard and batteries.

The engine runs on kerosene, being started with about  $\frac{1}{2}$  pt. of gasoline, and then when warm switched over to kerosene. The engine is started by the generator acting as a motor, using current from the batteries, and to reduce the current consumption while starting a compression relief is used, the relief being shut off as soon as the engine starts.

The engine is of horizontal type, water-cooled and runs at a moderate speed. A built-in magneto furnishes the ignition. The water jacket has a hopper cast integral with it so that the entire water-cooling apparatus is together. If desired, the water jacket can be furnished closed when it is desired to cool with running water or to use a separate cooling tank.

The generator has an output of 1900 watts at 30 to 42 volts, is multipolar, shunt wound and fitted with ball bearings. The generator slides along the base and is locked in any position, so that the slack can be taken out of the belt.

The storage battery consists of 16 cells of the sealed glass jar type, giving an average voltage of 32, which will approximate 30 volts at the lamp terminals.



*In the Fairbanks-Morse farm lighting system the generator is belted to the engine, which can be used separately*

The rated capacity of the battery is 66 ampere hours.

The switchboard has one double pole, double throw switch which is thrown down to start the engine and then thrown up to run. An automatic circuit breaker starts the battery charging as soon as the generator voltage is high enough and

breaks the circuit when the engine slows down or stops. A voltmeter, ammeter and rheostat complete the board.

The battery is floated on the line so that current can be used directly from the battery or with the generator running. The price of this outfit complete with engine is \$385.

# A Department of BETTER MECHANICS

No. 77

## Carburetor Adjustments on the Chalmers 6-30

*Stromberg Carburetor Lb-1*

**C**ONTRARY to the common belief, carburetor adjustment is not a matter of instinct, but an adjustment for which fairly absolute rules may be followed. However, before any adjustments are made it should be known definitely that the carburetor is at fault. This is rarely the case, and poor performance may be often traced to a number of small details that have been overlooked in the maintenance of the car.

The common low grade of gasoline now on the market, dirt or water in the gasoline line, sooty spark plugs, or plugs improperly set, frequently cause symptoms that indicate the carburetor to be out of adjustment. Owners run with the dash choker controls partially closed, or with the engine too cool, causing high gasoline consumption. Breakers are allowed to get out of adjustment or dirty.

All of these points should be checked up before any adjustments are made. This is the way to make the preliminary tests:

1—Test the compression by cranking the engine over slowly by hand. The compression should be about equal on all cylinders. If not, determine the weak cylinder, check up the valve tappet ad-

justments, and if necessary grind the valves.

2—Test the spark with the engine running. A semi-shorted or semi-dead plug will cause a light thump in that cylinder. Completely short the plugs, one by one, and determine the defective plug. The thump will stop when the defective plug is shorted. Another method of testing plugs is to remove the terminals, one by one, and holding first  $\frac{1}{2}$  in. and then  $\frac{1}{4}$  in. from the plug. If the resulting spark is blue in both cases, the plug is all right. If yellow, the plug should be removed, cleaned and adjusted. The points should be about .025 in. apart—not on one plug alone but on all plugs.

3—If the spark is still poor, inspect the breaker and timing. When closed the breaker points should set evenly together, as shown in Fig. 1, should not be dirty or pitted. If necessary, remove and clean the points with a fine file. Crank the engine until the points are in the position shown in Fig. 2. At the widest point of break the points should be .015 in. apart, as measured by a steel thickness gage. It may be advisable to check up the spark timing. To check spark timing:

A—Crank engine until forward cylinder is on the compression stroke, marking on flywheel 1—6—D. C. is in the center of the opening at the top of the flywheel.

B—Set spark lever at full retard.

C—At this point the distributing block in the timer should be making connection with forward cylinder plug, and the breaker should be just starting to open. By lifting off the distributing block, loosening the cam locking nut, the cam may be turned to the "just breaking" position and locked.

With good compression, a hot and properly timed spark, the engine should perform satisfactorily, with good economy, providing the carburetor is properly adjusted, and the rules for economical driving followed. Ofttimes the only

indication of needed carburetor adjustment is poor economy.

### To Adjust the Carburetor—High Speed Adjustment—Engine Idle and Throttle Wide Open

1—Place the dash control in the "lean" position. When in that position the damper valve should be wide open. This may be seen or felt through the holes in the intake pipe.

2—Turn the high speed adjustment, Fig. 5, in a counter-clockwise direction until the lever (M) has a small amount of back lash, or looseness.

3—Turn the high speed adjustment in a clockwise direction until this looseness in the lever (M) is just taken up.

4—From that point turn the high speed adjustment in a clockwise direction two full turns. This amounts to 16 notches, or clicks, and gives the normal adjustment. Running conditions may necessitate two or three more notches later in the road test.

5—Turn the low speed adjustment down as far as it will go.

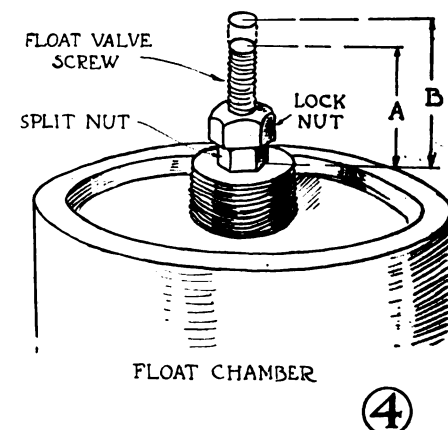
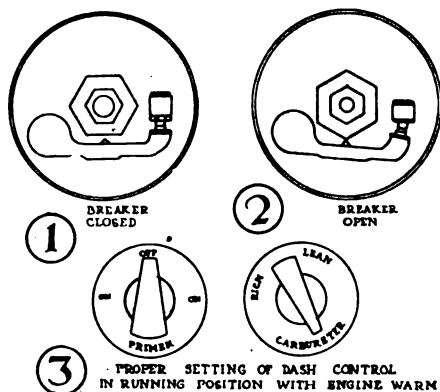


Fig. 4—Adjusting the float needle. The difference between the distances A and B should be  $\frac{5}{64}$  in. If more or less it should be changed to the correct setting



Figs. 1 and 2—Breaker points in open and closed position. Fig. 3—Dash control settings

6—Open it one and one-half turns. At this point the clearance between the lever (*M*) and the pointer should be  $\frac{1}{64}$  in. (This point is marked "clearance" in Fig. 5.) The small pointer marked (*L*) may be turned to adjust this clearance.

#### Idling Adjustment

1—Close throttle and start engine, allowing it to warm up.

2—Set the slow speed adjustment to where the engine runs the fastest. By screwing it in the mixture is made richer; by screwing it out, leaner. The idling adjustment may be left a little richer than is absolutely necessary, to prevent stalling in traffic. Its setting has no bearing on the running economy of the engine.

#### Correct Float Needle Setting

(Fig. 4)

1—Remove the cover over the float valve stem.

2—Press the valve lightly into its seat and measure the distance (*A*).

3—Raise the valve to the limit of its travel and measure the distance (*B*).

4—The difference between the distances (*A*) and (*B*) should be  $\frac{5}{64}$  in. If more or less loosen the lock nut, hold the split nut and turn the central screw the required amount. Turn it out to increase the lift and in to decrease the lift.

Though this is rarely required, when necessary, both new valves and seats

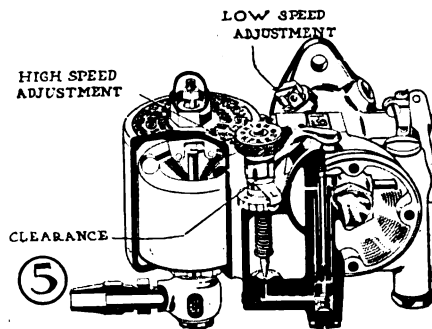


Fig. 5—Low and high-speed adjustments on the Stromberg Lb-1. The idling adjustment has no bearing on the running economy

should be obtained. Do not attempt to grind either a new or old needle valve to a seat. The only fitting required is to drive the valve into its seat with a few light taps with a light hammer, and then to twist it around a few times on its seat.

#### Conditions Governing Economy

In order to completely vaporize the low-grade gasoline now on the market, the engine should be operated as warm as possible. A good rule to follow is to permit the engine to operate with the cooling water very near boiling. In winter the radiator should be partially covered; in summer the condition cares for itself.

Good performance is little indication that the mixture is not too rich—in fact, about the only indication of too rich a mixture is poor economy. This is often caused by carrying the primer and choke valve on the dash in the closed position. The proper setting for these is shown in Fig. 3, it of course being understood that the engine has been first started and warmed up.

## Scraping Engine Bearings

**S**CRAPING engine bearings is a slow and careful operation at best, and to be right must be done in a painstaking way till everything is as perfect as it is possible with skill of hand and eye.

The engine bearings that are scraped are the lower connecting-rod bearings and the crankshaft bearings. In modern engines these are usually babbitt or white brass or some similar metal which is soft, easily cut and tough. To scrape in a set of bearings properly will take a good man from 12 to 20 hours, depending upon whether he hits any snags in the shape of bearings that are out of line.

Before starting the crankshaft is to be tested for alignment, and, if in line, the crank-throw bearings and main bearings are to be examined for finish.

It is quite a waste of time to scrape bearings to a rough shaft because the shaft will cut the bearings out in no time at all, and they will be just as bad as they were before, and perhaps worse.

If the bearing surfaces of the shaft are not smooth and polished, they should be turned, ground, lapped or polished, as the case may require. Nothing will cut a bearing as quickly as a "furred" shaft.

Assuming that the shaft is true and smooth, the connecting-rod bearings are to be scraped first.

If the shims are solid, they will need to be filed down till the rod can just be moved on the shaft when the nuts are tightened down all the way.

A very convenient stand for holding the shaft while scraping the connecting-rod bearings is shown in Fig. 1. This stand holds the shaft rigid and permits the rod to be tried and tested without the necessity of holding the shaft in

By J. HOWARD PILE

the vise or with the other hand. It is most preferably placed about 2 ft. to the left of the vise, so that the workman can have all of his equipment together to save steps. A flat piece of iron or steel is bent at right angles and one leg is drilled and bolted to the bench, so that the outside of the other leg comes flush

with the edge of the bench. The outer leg has two holes drilled through it to exactly correspond to two holes in the flange of the crankshaft that the fly-wheel is bolted to.

If only one make of crankshaft is to be used, the holes will always correspond. If different crankshafts are to be worked on the holes will not always be the same, so one hole at the top and a slot for the bottom bolt will allow different spacings of bolt holes and different diameters of flanges.

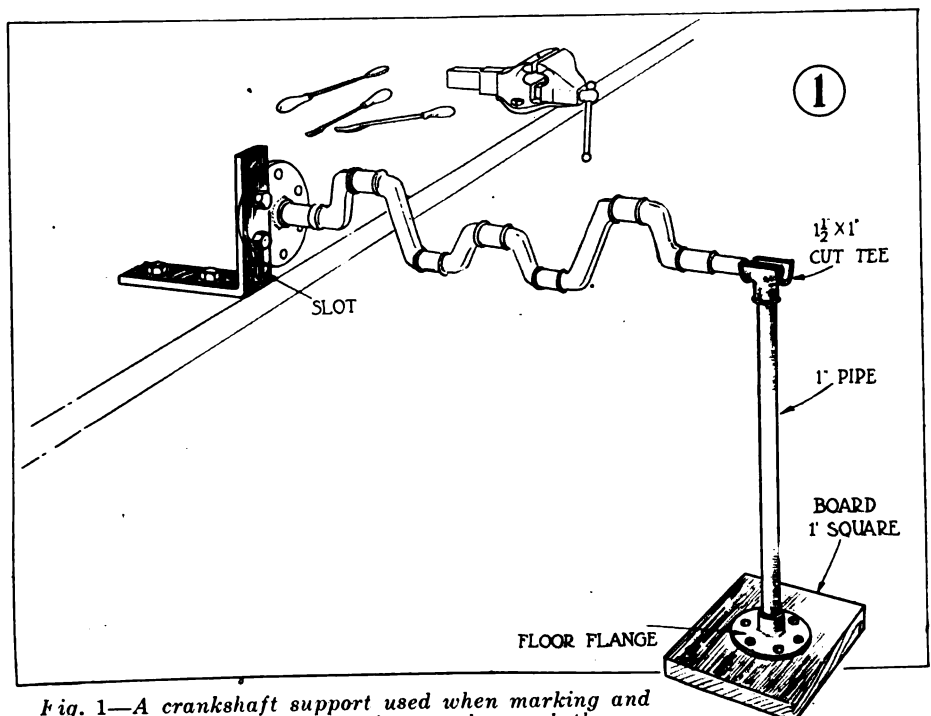


Fig. 1—A crankshaft support used when marking and fitting the connecting-rod bearings to the crank throws. The fitting on the bench is bolted on, the end support being movable

The support that holds up the extended end of the shaft is made of stock pipe fittings with a piece of board about 1 ft. square screwed on the bottom so that it will stand up. The top fitting is a tee with 1½ in. pipe size ends and a 1-in. pipe size bottom outlet. The top part is sawed off and the bottom part screwed onto a piece of 1 in. pipe, which in turn screws into a floor flange fastened to the board with wood screws.

The height of the support must be such that the end of the shaft just rests its weight on the support. The spring of the right-angled piece of iron will take care of any inequalities in height due to different shafts.

### Bearing Scraping

After sufficient shims have been removed from between the cap and the rod so that the bearing fits tight on the shaft, the rod nuts are taken off and the shaft bearing surface given a very light coating of marking compound. This may either be Prussian blue or lamp-black mixed with oil.

The lampblack is far better although it is not in as general use as the blue. The composition is made by stirring powdered lampblack into lubricating oil and skimming off the surplus oil from the top each day for about a week. This will leave a thick compound of the consistency of hard grease.

A little dab on the fingers is sufficient to wipe on the shaft as only a very light coat is required. If too much is put on it will smear all over everything, and the low as well as the high places will be marked on the bearing.

Put the connecting rod in place and put the cap on and then draw up tight with the nuts, being particular to see that the punch marks on the side of the rod and the cap are so placed that the cap fits the right way and the connecting rod is right side forward. Then rock the rod back and forth and swing it clear around the shaft about twice.

When the nuts are taken off and the cap removed the high spots in the bearing will be found to be marked in black. If lampblack has been used the marks cannot be removed by wiping, but with Prussian blue care must be taken not to smear it around.

When the bearing is first marked and before any scraping has been done the marks will most likely be widely separated by unmarked areas. The problem is to get the high spots down until the bearing will mark all over.

If the bearing is only scraped on the exact places that are marked the process of bringing down the bearing will be a long and slow one, but if some judgment is used in reaching out a little with the scraper and taking down adjacent high spots the bearing will come down much quicker.

The marking process is repeated from time to time till the whole surface is marked.

Fig. 3 shows how these markings look. In practice it is not possible to get every white mark off the bearing, and if some few very small areas remain white, say

not over one-tenth of the total surface, this is let go as the bearing will wear in this much in a short time.

When the scraping is completed the nuts when set down all the way should make the rod just stiff to turn with the hand. When the rod is placed so that it is a horizontal position it should not fall of its own weight, but should move when pushed with the hand.

After the scraping is done the burnisher shown in Fig. 2 may be run over the entire surface of the bearing to shine it up and smooth the surface.

The rod bearings should now be tested for parallelism. That is, the piston pin and the crank-throw must be parallel, and the bearings that they move in must also be parallel, or binding and rapid wear will take place.

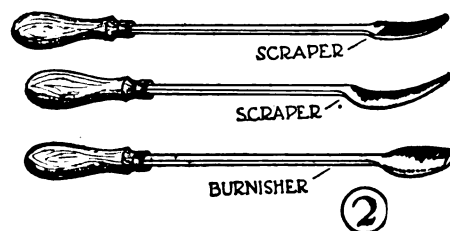


Fig. 2—Two styles of bearing scrapers and a burnisher

The testing is done by putting a mandrel in the lower bearing and one in the upper bearing, laying the lower mandrel across two X-blocks on a surface plate and testing both ends of the upper mandrel with a planer gage.

If it is found that the bearings are not parallel there are only two possible remedies: (1) Bend the connecting rod till they are parallel, or (2) scrape the lower bearing on one side or the other till the test shows that they are parallel. This latter is a long job and means scraping in the bearing all over again, and it is to be avoided if possible. Rather than this, bend the rod, provided it does not have to be bent enough so that the side of the top bearing will hit against the piston boss when the piston is in the cylinder.

### The Main Shaft Bearings

Before marking or scraping the main bearings, each bearing cap is to be set down tight with the nuts and tried for tightness, the other bearings being loose at the time. The shaft should be able to be turned with a bar about the length of the crank handle without great difficulty. For convenience this bar can be drilled and bolted to the flywheel

flange and will serve as a handle while working on the bearings and in subsequent assembling.

In marking the upper bearings that are in the crankcase the case is laid upside down so that the shaft can lie in them. All these are worked simultaneously so that the shaft will align.

That is, you do not finish one bearing and the cap that goes with it and so on, but finish up all the upper bearings first.

Very likely the center bearing will be high and the shaft will rock on it. If so it will have to be scraped down till there is no rocking and until all the bearings mark all over.

Or again it may be that the center bearing is low, not marking at all, and in this case the end bearings will have to be scraped out till the center bearing marks all over.

In marking these bearings the weight of the shaft is sufficient. Do not put on the caps at all as they would force or spring the shaft down to mark the low bearings.

After finishing the upper bearings the cap bearings are to be done the same way as the connecting-rod caps were done, bringing them down to a perfect marking and having each one so that when the nuts are set down tight the shaft can be turned with the handle but still offers resistance.

If the shaft turns too hard, do not think that loosening up the nuts is the remedy.

It is not.

If such is the case an extra thickness of shim brass will have to be put in so that the nut can set down tight and still allow the shaft to turn. To loosen the nuts will only be to invite trouble.

After scraping the bearings and burnishing, rap the caps of the bearings with a light hammer to be sure that no chips have gotten in between to keep the cap off the shim.

Bearing scraping must be done with the utmost care. After scraping, and before marking, dust the metal chips out with a little paint brush. See that the oil grooves are not clogged up with chips, then wipe your finger around the bearing to insure that there is no dirt or metal. If grease and oil are removed from everything you are working with, cleaner and better work is possible.

Wash all the parts off with gasoline or kerosene.

Have the scrapers sharp and never try to do work with a nicked scraper. Scrapers can be made from half-round files as the quality of the steel and the temper are just right for bearing scrapers.

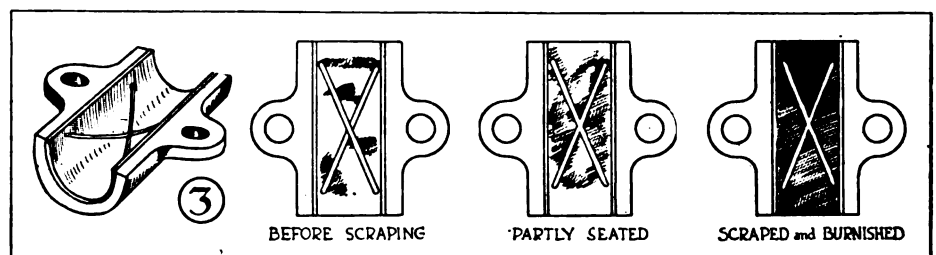


Fig. 3—The evolution of a bearing, showing the appearance of the markings as the scraping proceeds



# The Motor World Gasoline Rate Chart

## A Ready Reference Table for the Garage and Supply Station Man

The vertical columns of black figures give the price per gallon in cents and the horizontal lines of black figures give the number of gallons. To find how much to charge for any number of gallons at a given price, run your eye along the top line of number of gallons, then down the nearest vertical column of prices. The price to be charged will be found in no case more than three numbers from the price per gallon. Where the result comes out in fractions of a cent, the table shows the next higher cent.

Cents per gal.	2	3	4	5	6		7	8	9	10	11	Cents per gal.	12	13	14	15	16	Cents per gal.
<b>25</b>	.50	.75	1.00	1.25	1.50	<b>25</b>	1.75	2.00	2.25	2.50	2.75	<b>25</b>	3.00	3.25	3.50	3.75	4.00	<b>25</b>
<b>25½</b>	.51	.77	1.02	1.28	1.53	<b>25½</b>	1.79	2.04	2.30	2.55	2.81	<b>25½</b>	3.06	3.32	3.57	3.83	4.08	<b>25½</b>
<b>26</b>	.52	.78	1.04	1.30	1.56	<b>26</b>	1.82	2.08	2.34	2.60	2.86	<b>26</b>	3.12	3.38	3.64	3.90	4.16	<b>26</b>
<b>26½</b>	.53	.80	1.06	1.33	1.59	<b>26½</b>	1.86	2.12	2.39	2.65	2.92	<b>26½</b>	3.18	3.45	3.71	3.98	4.24	<b>26½</b>
<b>27</b>	.54	.81	1.08	1.35	1.62	<b>27</b>	1.89	2.16	2.43	2.70	2.97	<b>27</b>	3.24	3.51	3.78	4.05	4.32	<b>27</b>
<b>27½</b>	.55	.83	1.10	1.38	1.65	<b>27½</b>	1.93	2.20	2.48	2.75	3.03	<b>27½</b>	3.30	3.58	3.85	4.13	4.40	<b>27½</b>
<b>28</b>	.56	.84	1.12	1.40	1.68	<b>28</b>	1.96	2.24	2.52	2.80	3.08	<b>28</b>	3.36	3.64	3.92	4.20	4.48	<b>28</b>
<b>28½</b>	.57	.86	1.14	1.43	1.71	<b>28½</b>	2.00	2.28	2.57	2.85	3.14	<b>28½</b>	3.42	3.71	3.99	4.28	4.56	<b>28½</b>
	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>		<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>		<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	
<b>29</b>	.58	.87	1.16	1.45	1.74	<b>29</b>	2.03	2.32	2.61	2.90	3.19	<b>29</b>	3.48	3.77	4.06	4.35	4.64	<b>29</b>
<b>29½</b>	.59	.89	1.18	1.48	1.77	<b>29½</b>	2.07	2.36	2.66	2.95	3.25	<b>29½</b>	3.54	3.84	4.13	4.43	4.72	<b>29½</b>
<b>30</b>	.60	.90	1.20	1.50	1.80	<b>30</b>	2.10	2.40	2.70	3.00	3.30	<b>30</b>	3.60	3.90	4.20	4.50	4.80	<b>30</b>
<b>30½</b>	.61	.92	1.22	1.53	1.83	<b>30½</b>	2.14	2.44	2.75	3.05	3.36	<b>30½</b>	3.66	3.97	4.27	4.58	4.88	<b>30½</b>
<b>31</b>	.62	.93	1.24	1.55	1.86	<b>31</b>	2.17	2.48	2.79	3.10	3.41	<b>31</b>	3.72	4.03	4.34	4.65	4.96	<b>31</b>
<b>31½</b>	.63	.95	1.26	1.58	1.89	<b>31½</b>	2.21	2.52	2.84	3.15	3.47	<b>31½</b>	3.78	4.10	4.41	4.73	5.04	<b>31½</b>
<b>32</b>	.64	.96	1.28	1.60	1.92	<b>32</b>	2.24	2.56	2.88	3.20	3.52	<b>32</b>	3.84	4.16	4.48	4.80	5.12	<b>32</b>
<b>32½</b>	.65	.98	1.30	1.63	1.95	<b>32½</b>	2.28	2.60	2.93	3.25	3.58	<b>32½</b>	3.90	4.23	4.55	4.88	5.20	<b>32½</b>
	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>		<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>		<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	
<b>33</b>	.66	.99	1.32	1.65	1.98	<b>33</b>	2.31	2.64	2.97	3.30	3.63	<b>33</b>	3.96	4.29	4.62	4.95	5.28	<b>33</b>
<b>33½</b>	.67	1.01	1.34	1.68	2.01	<b>33½</b>	2.35	2.68	3.02	3.35	3.69	<b>33½</b>	4.02	4.36	4.69	5.03	5.36	<b>33½</b>
<b>34</b>	.68	1.02	1.36	1.70	2.04	<b>34</b>	2.38	2.72	3.06	3.40	3.74	<b>34</b>	4.08	4.42	4.76	5.10	5.44	<b>34</b>
<b>34½</b>	.69	1.04	1.38	1.73	2.07	<b>34½</b>	2.42	2.76	3.11	3.45	3.80	<b>34½</b>	4.14	4.49	4.83	5.18	5.52	<b>34½</b>
<b>35</b>	.70	1.05	1.40	1.75	2.10	<b>35</b>	2.45	2.80	3.15	3.50	3.85	<b>35</b>	4.20	4.55	4.90	5.25	5.60	<b>35</b>
<b>35½</b>	.71	1.07	1.42	1.78	2.13	<b>35½</b>	2.49	2.84	3.20	3.55	3.91	<b>35½</b>	4.26	4.62	4.97	5.33	5.68	<b>35½</b>
<b>36</b>	.72	1.08	1.44	1.80	2.16	<b>36</b>	2.52	2.88	3.24	3.60	3.96	<b>36</b>	4.32	4.68	5.04	5.40	5.76	<b>36</b>
<b>36½</b>	.73	1.10	1.46	1.83	2.19	<b>36½</b>	2.56	2.92	3.29	3.65	4.02	<b>36½</b>	4.38	4.75	5.11	5.48	5.84	<b>36½</b>
	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>		<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>		<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	
<b>37</b>	.74	1.11	1.48	1.85	2.22	<b>37</b>	2.59	2.96	3.33	3.70	4.07	<b>37</b>	4.44	4.81	5.18	5.55	5.92	<b>37</b>
<b>37½</b>	.75	1.13	1.50	1.88	2.25	<b>37½</b>	2.63	3.00	3.38	3.75	4.13	<b>37½</b>	4.50	4.88	5.25	5.63	6.00	<b>37½</b>
<b>38</b>	.76	1.14	1.52	1.90	2.28	<b>38</b>	2.66	3.04	3.42	3.80	4.18	<b>38</b>	4.56	4.94	5.32	5.70	6.08	<b>38</b>
<b>38½</b>	.77	1.16	1.54	1.93	2.31	<b>38½</b>	2.70	3.08	3.47	3.85	4.24	<b>38½</b>	4.62	5.01	5.39	5.78	6.16	<b>38½</b>
<b>39</b>	.78	1.17	1.56	1.95	2.34	<b>39</b>	2.73	3.12	3.51	3.90	4.29	<b>39</b>	4.68	5.07	5.46	5.85	6.24	<b>39</b>
<b>39½</b>	.79	1.19	1.58	1.98	2.37	<b>39½</b>	2.77	3.16	3.56	3.95	4.35	<b>39½</b>	4.74	5.14	5.53	5.93	6.32	<b>39½</b>
<b>40</b>	.80	1.20	1.60	2.00	2.40	<b>40</b>	2.80	3.20	3.60	4.00	4.40	<b>40</b>	4.80	5.20	5.60	6.00	6.40	<b>40</b>
<b>40½</b>	.81	1.22	1.62	2.03	2.43	<b>40½</b>	2.84	3.24	3.65	4.05	4.46	<b>40½</b>	4.86	5.27	5.67	6.08	6.48	<b>40½</b>

# Repairshop Shortcuts

*From Motor World Mechanics*

## No. 1474—MACHINE-KEY EXTRACTER

A device to extract or draw machine keys is made with two tempered claws which grip the key, means for forcing the claws together and a threaded end to enable the claws to be pulled, thus pulling the key. The male and female claws are pivoted on a hinge pin and two pieces of pipe of equal length with a piece of heavy bar steel across them form the brace against which the nut pulls.—Charles H. Willey, Concord, N. H.

## No. 1475—CRANKSHAFT TEST- CENTERS

Crankshaft test centers that can be clamped to the bench are made from 2 x ½ in. flat stock, each center being formed in one piece and tapped at the bottom for the clamp bolts. Machine bolts are used for the centers and these have their points ground and case hardened. These centers will take any length shaft and a square or a block of wood and a bit of chalk are the only tools needed to mark the part that is out of true. The shaft is rotated by hand.—Charles H. Willey, Concord, N. H.

## No. 1476—CONNECTING ROD ALIGNMENT

Many engine diseases are a result of misalignment of the connecting-rod bearings, and this alignment should be checked and made perfect when overhauling. To do this, a Bath indicator, combined with a planer gage, x-blocks and a surface plate, offer an excellent equipment. Arbors are placed in the connecting-rod bearings; as set up made as illustrated, and the deflection of the Bath indicator needle taken in .001 in. on the dial. When alignment is perfect, the readings on both sides of the upper arbor should be equal.—S. T. W.

## No. 1477—BRIDGE FOR VALVE GRINDING

A bridge or clamp to pull the cylinders into the shape that they assume when the cylinder head is bolted on allows more perfect valve fitting. The bridge is forged to fit the particular cylinder, ends faced off and a hole bored for the stud. The sides of the bridge are cut out over the valves so that they can be lifted out without disturbing the bridge.—C. P. Geen, Olds Motor Works, Lansing, Mich.

## Make a Dollar

*HOW often have you been compelled to rack your brain to overcome some difficulty? But when you did find a solution—what satisfaction it was! Well, here's a chance for you to dig some of those life-savers out of their hiding places and put them to work for your fellow-craftsmen. Send them to Motor World. We will pay you a dollar for every one accepted for publication.*

*The only requirements are these:*

*1—Describe the shortcut briefly but clearly, in few words.*

*2—Send a sketch, in pencil or pen, no matter how rough; our artists will finish the job.*

*3—Write on ONE side of the paper only.*

*4—Sign your name and initials, the name of the company you are with, and the town.*

*Write plainly. If your name is unusual, print it in capital letters.*

## No. 1478—SHIFTING A FORD BODY TO THE CENTER

A Ford body is shifted to the center of the car so that the head of the spring center-bolt will fit in the center of the front cross-frame member by putting a jack between the inside of the wheel and the front cross-frame member. Raising the jack shoves the bed to the center without much effort.—F. G. Hoskins, Hoskins Garage, Eden, Tex.

## No. 1479—PISTON-PIN DRIVER

A piston-pin driver made of cold-rolled steel, one end being turned down so that

the nib of the device will enter the hole in the piston pin and drive it into place in the piston without defacing the pin or the piston with hammer marks. The outside diameter of the driver should be slightly less than the diameter of the piston pin.—Garford Motor Truck Co., New York City.

## No. 1480—VALVE-PIN CUTTER

A valve-pin cutter for cutting valve pins from drill rod is made from an old 14-in. flat file and two pieces of flat stock, these pieces being held in the vise. The file is ground off on one side and one edge is ground to slightly less than a right angle. A hole is bored and a bolt goes through the file and the bar, forming a fulcrum. Different size holes in the bar allow different size drill rods to be held while cutting.—Charles H. Willey, Concord, N. H.

## No. 1481—TESTING A FORD CARBURETER

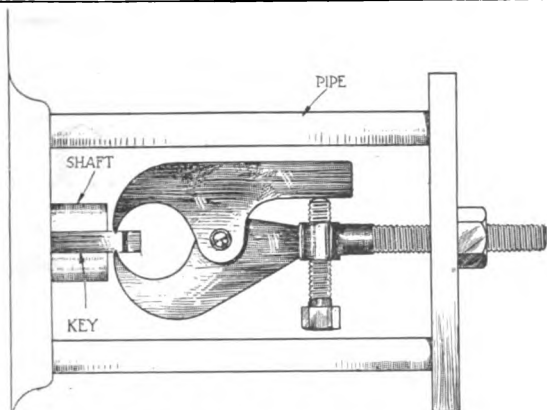
A Ford carbureter is tested on the bench by using a short piece of pipe, one end of which is soldered into a tin cup. The other end of the pipe is fitted with a regular clamp nut to fit the Ford carbureter. When the tin cup is filled with gasoline, sufficient head is placed on the gasoline to enable adjustments to be made to the float and other parts requiring attention.—F. G. Hoskins, Hoskins Garage, Eden, Tex.

## No. 1482—GASKET PUNCHES

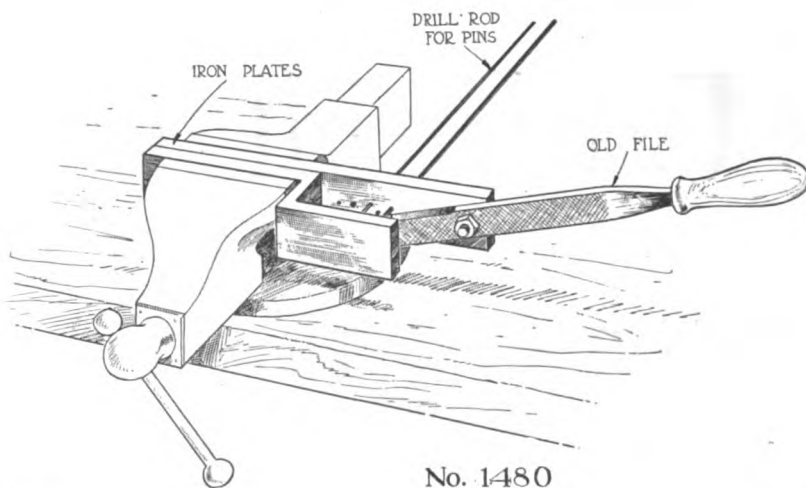
Gasket punches are made from short lengths of pipe or steel tubing by grinding a bevel on the outside of one end and cutting out a section for the removal of the cores. Different sizes are made from different size pipe. A block for cutting the gaskets on is made of short pieces of 2-in. hardwood bolted together. These are used end up so as to cut into the grain endwise.—Charles H. Willey, Concord, N. H.

## To Produce 300 Tractors Daily

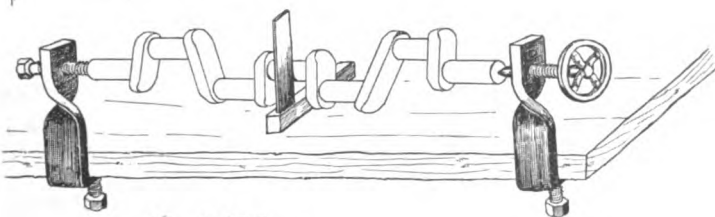
DEARBORN, MICH., Aug. 3—The new Fordson tractor plant to be built in Hamilton, Ohio, is expected to be in production within 90 days, and will employ between 500 and 1000 men. The plant will manufacture and assemble tractors for Ohio, Indiana, Illinois and territory south of the Ohio River. The water power that will be developed at this plant will be sufficient to manufacture 300 tractors a day.



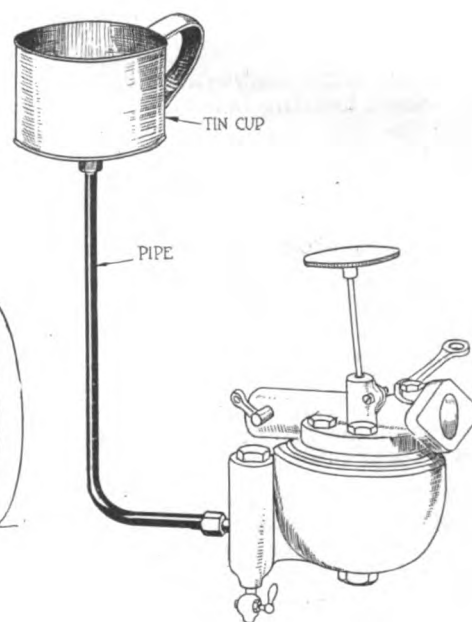
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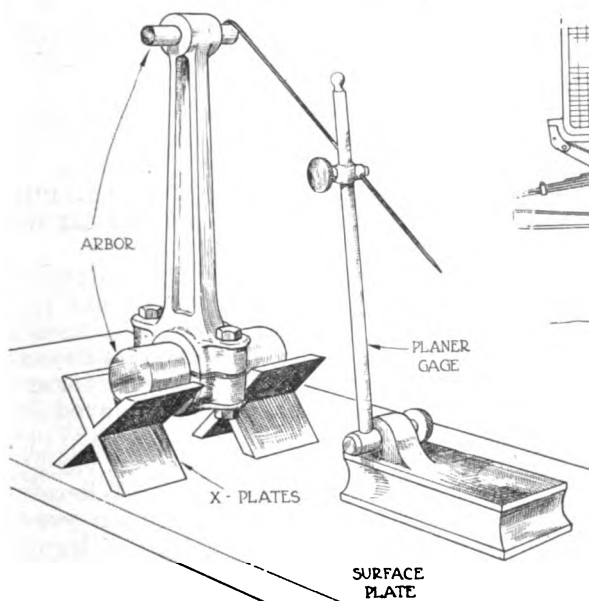
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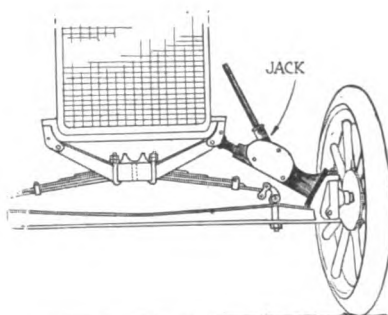
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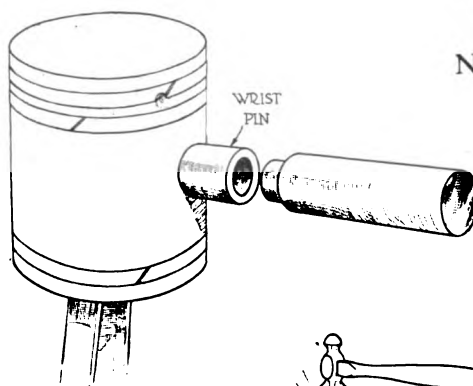
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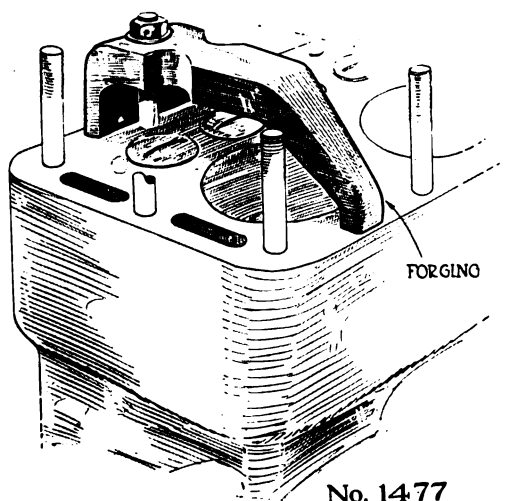
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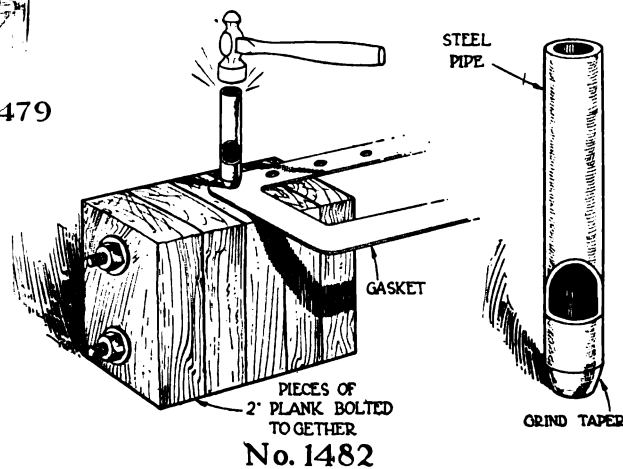
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# Editorial Observation

## Those War Taxes

CONGRESS has on its hands the fine young job of working out revenue taxes. It must collect as much as possible. It must tax every trade or activity or class of people that is able to pay a tax.

As usual, it has decided to tax the motor car. In accordance with suggestions made by the dealers at their recent hearing before the Ways and Means Committee the committee has decided to tax all the cars in the United States, instead of only the comparatively small number that are sold—or are likely to be sold.

But it has proposed this tax on a basis that is decidedly wrong. It proposes to tax all of America's 5,000,000 cars on their original list price, which is about the same as assessing city property values according to what the property cost when new. If a house cost \$25,000 twenty years ago and is worth only \$5,000 now, it is NOT taxed on the original price. Neither should motor cars be taxed on their original price.

It is assumed that the tax-fixers aim to collect the largest taxes from those who pay the most for their cars—but the proposed tax will not do it, for the people who to-day own the cars that once cost from \$3,000 to \$10,000 are not the people who can afford cars of those prices. The high-priced cars of a few years ago are to-day in the hands of men who have those cars merely because they represent good remaining value at a low price.

Take the Packards and Mercedes cars of some years ago. They cost from \$5,000 to \$10,000 when new. To-day they sell for about \$500, and many of them are used in passenger transportation service by small hackmen, who pick these vehicles up because they give good service and can be bought for a small investment.

The proposed tax on a \$10,000 car would be \$340, which is 68 per cent of what the car is worth, if it sells for \$500. On a \$7,000 car it is \$220, or 44 per cent of what the car is worth to-day.

Take, for example, a Packard 2-48 enclosed car of 1913, many of which make of car are picked up by taxicab men. The car cost \$5,800 to \$6,050 when new. Let us call it \$6,000. To-day they have been selling, according to the National Used Car Market Report, for \$700. The proposed tax on this car would cost the taxicab man \$140, which is a tax of 20 per cent on a vehicle that is used for strictly utilitarian purposes.

Or, take the farmer who buys used cars in great quantities for service on the farm. Many farmers maintain two cars, one for carting produce to market and the other for passenger service. He is going to be taxed from 15 to 25 per cent of the value of this

vehicle while his less useful horses and wagons go taxless.

Also, what about the great fleet of used cars that have been put into delivery service, often with delivery bodies put on in place of the old touring body? Is the suburban grocer to pay a tax of 15 or 25 per cent on his delivery wagon at a time when he is having all he can do to make ends meet?

There is no objection to taxation, as President Vesper of the N. A. D. A. told the committee which is framing this tax, but there is an objection to the classification of this industry as unsubstantial and to discriminatory legislation which is harmful to the industry and the nation generally.

Cars should be taxed according to the purse of "the man who owns one" and not according to the purse of the well-to-do individual, who got first value from the vehicle and then turned it over to Mr. Small Purse, who would rather have it than a cheap new car when both can be had for the same price.

The Ways and Means Committee may contend that the only fixed figure in connection with a car is the original list price—but this is not so. The used car values of to-day are almost as well fixed as the original prices. The reason used-car values are regarded as unstable is that dealers have not employed common sense in trading. The values of cars have never varied greatly, even if there has been great variation in the allowances foolish dealers made. Wherefore, a used car of a certain make and certain year is worth very close to a certain percentage of its original cost—and that is all. And that is the figure on which the tax should be based.

Some time ago Motor World investigated the used-car situation and worked out its Used Car Chart, which is to-day used by quite a number of dealers in determining the value of cars. And the National Used Car Market Report is another good guide. With data like these extant why should there be any doubt as to what a car is worth?

It is also proposed to tax sales 10 per cent. It is doubtful whether this is wise. Ten per cent is more than the dividends of some manufacturers, and, no matter where any tax or expense is collected, it is always the consumer who must pay. Otherwise there can be no product, for when taxes exceed profit production ceases—and then the entire source of tax income is eliminated. There is a limit to which taxation can go without becoming dangerous to the source of the tax.

It might not be a bad idea if dealers would write to their congressmen, both on and off the Ways and Means Committee and set before them the facts as stated on this page, for Congress cannot be expected to act in accordance with facts unless it gets facts.



## Letters from Readers

*THIS page is for the use of MOTOR WORLD readers with something to say. Letters on subjects of interest to dealers, garagemen, repairmen and jobbers are always welcome.—EDITOR.*

### Substantial Industries

Editor Motor World: Enclosed is a copy of a letter I am writing to Chairman Claude Kitchin, of the Ways and Means Committee of the House of Representatives, whom I have known personally for a great many years. I hesitate to believe Mr. Kitchin will be as drastic in handling the automobile situation in the House as recent reports might lead some people to believe.—J. G. Anderson, President Anderson Motor Car Co., Rock Hill, S. C.

Dear Mr. Kitchin: I hand you herein a folder which I ask you to kindly read carefully. It is taken from the New York Independent, which is a reliable magazine. I am sure you will agree with me that the automobile should not be put in the class of musical instruments, perfumery, etc. It is a necessity.

I see it stated in the papers that your committee is considering changing the 3 per cent on automobiles to 10 per cent. Of course, I do not believe the committee will do anything of the kind, as that would put the automobile entirely out of business. It is a great industry and tens of thousands of people are dependent upon it, and unless it is necessary to win the war, it should be dealt with liberally.

The tax of 3 per cent has cut down our business until there is very little left of it. If it should be increased to 10 per cent, that would mean that we would have to close up. A federal license on all cars, graduated according to horsepower, of from \$5 to \$15 would result in bringing in more money and would distribute the tax among a large number of people.

The increased cost of material and labor has made it necessary to increase the price of our car about \$400. This has the effect of cutting down business. If a heavy tax is added it will put us and other small manufacturers out of business.

The automobile is an absolute necessity. It is a great time saver. Very few are used exclusively for pleasure. They are now being very generally used by the farmers. The farmer can come to town and return home in an hour or two. It used to take him a whole day. The saving in time to hundreds of thousands of farmers means a whole lot in the aggregate. They relieve, to a great extent, the congestion of the railway and are just as much of a necessity as the telephone.

But the war must be won. We have no objection to paying our share. All we want is a square deal as compared with other industries. If it takes all we have to whip the Germans you are welcome to it, for if they are not defeated we will have no country and nothing else.

Our factory is now being largely run on

war work, and we are saving the Government thousands of dollars, owing to the fact that we are located where we can get cheap lumber and labor. If it were not for the war contracts we would not be in business at all, as there is nothing to the automobile business as at present carried on. Our entire plant is at the disposal of the Government, with or without pay, and it can take me at any time for any kind of a job that I can fill. I am more interested in exterminating the Germans than I am in the automobile business or anything else. It is a question of what is best to do. If the automobile is put out of business hundreds of thousands of people will not be able to pay taxes, and for reasons stated herein I think the industry is entitled to a square deal along with the other substantial industries of the country, and I feel satisfied the committee will do the right thing if it has the proper information.

Another matter that is of importance to us is the tax on the capital stock of corporations. This will be unfair. Some corporations with small capital are making big profits. Other corporations with large capital are making nothing. In our case, since the war we have not paid expenses. Our capital is \$1,500,000. The year ending July 1 shows that we have made less than 1 per cent. You see therefore that if you were to tax us on our capital stock 2 per cent or 5 per cent, we would have to go down into the capital in order to pay the taxes. This would result in bankruptcy if carried on long enough.

Another illustration of how it would work a hardship is that many mercantile firms are corporations, while many of their competitors are simply run as copartnerships. An illustration in Rock Hill is that of A. Freidheim and Brother, who run as a firm with probably \$300,000 capital. They would have to pay no tax. The Roddey Mercantile Co. is a corporation with \$100,000 capital and would have to pay the corporation tax. Manifestly this is unfair. Trusting that you will

give these matters serious consideration. J. G. Anderson, president, Anderson Motor Car Co., Rock Hill, S. C.

### Good Service Car

Editor Motor World: We are to-day sending you photograph of our service car which we have recently installed.

This machine is a 1909 Pierce-Arrow, the only change being in the body, which we have arranged to be as convenient as possible for this work with built-in tool boxes, with locks, a drawbar for towing, and abundant room for about 8 men in addition to our equipment. This machine has proven so handy and convenient that we wonder how we ever got along without it. A car of this nature is a very essential part of the equipment of every garage. We trust that this picture may be of some benefit to you and that you may be able to use same in the Motor World.—Model Auto Co., per G. P. Lamberton, Secretary and Treasurer, Clinton, Iowa.

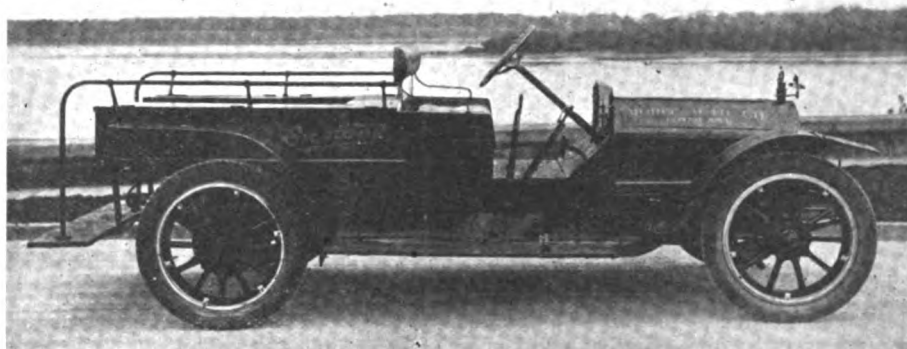
### Dike's Story

Editor Motor World: "Well, Bob," said Charlie, "I don't see any way of having a vacation this summer. But I do want to get away from the store a few days where I don't have to be all the time saying, 'Yes, your car takes a seven-eighth, eighteen spark plug,' and 'yes, we will deliver your new car next week.'"

"But, Bob, I want to tell you that this is war times, and I don't want to go away to the mountains and spend money when I ought to be buying more Liberty bonds."

Bob did not say anything. He had been appointed manager of the War Savings Stamp Drive, besides being secretary of the Red Cross, and thus the story runs as it happened in the office of the Lamar Motor Sales Co., at Lamar, Col., between Bob Christy, manager, and Charlie Wooden, assistant manager. This all happened one evening in June.

Next evening at the meeting of the Business Men's Association Charlie delivered a surprise when he stated that Lamar was going to put on the Greatest Fourth of July Celebration ever, and that it was all going to be given by local people, and that every cent taken in was going to the Red Cross. That it meant



Service car used by the Model Auto Co. of Clinton, Iowa

that there would have to be 500 workers. All thought that the plan was great and Charlie was elected director.

Bob met him the next morning down at the office and said: "You help me on stamps and I will you on the Fourth;" so the deal was made. First came the War Savings Stamp pledges, and that drive lasted three days. Lamar's share was \$95,000. They went over the top.

Then came the planning for the Big Show. Every club in the city was assigned a stand, every church, every lodge, and thirty-six refreshment stands, to erect tents for the big Mexican bull fight, for the Plantation Show, for the Forty-nine Dance Hall, for the Girls' Show. Then doll racks, paddle wheels, hit the Kaiser and every kind of device to build, besides getting up a big auction, where everything was auctioned off.

All the garages gave tires and tubes, farmers gave cows, horses, calves and chickens. The ladies brought quilts and fancy work.

For 10 days Wooden's desk was closed. On the eve of July 4th the workmen came to erect the carnival, and, with Bob and Charlie directing, in four hours all was ready.

The morning of the Fourth was rainy, but when at midnight, and as the last big tableau was set off, lighting the heavens with a large sign, "JOIN THE RED CROSS," \$7,000 had been placed in the bank, 10,000 people shouted praise of the greatest event in the city's history. Charlie and Bob were found back in the office, and with a smile Charlie said: "I have spent vacations everywhere, but this beats them all. My vacation is over, the war chest has \$112,000 more, and from an advertising standpoint our business will be helped 25 per cent." Bob smiled and said: "It's a Big Game if YOU DON'T WEAKEN."—"Dike," Lamar, Col.

## Marking Wrenches

Editor Motor World: I do not know exactly what department would be most interested in this problem, but perhaps some of the other constant readers can help with a solution.

Stated briefly it is, "How can the wrenches used in the repairshop be marked so that the mechanics and helpers can tell each other what wrench to use or to pass to them?"

In the average miscellaneous assortment usually found in a shop there will be several methods of factory marking and some not marked. Most of them will be too hard to stamp on the ends and some of them are too hard to stamp at any place. Polished wrenches might be etched with a mixture of copper-sulphate and salt or with acid; rough wrenches might be stamped near the center or near the handle.

What is the best method of etching?

Again, we pick up one open end wrench and find it marked 5/16 (to be used on U. S. S. nuts), another will be marked the same 5/16 (to be used on cap screws), while another will be marked the same 5/16 (to be used on set-screws or the actual opening). Sockets

are usually marked with the actual sizes and run by thirty-seconds of an inch. Many mechanics do not know whether 21/32 in. is larger or smaller than 5/8 in.

Now it seems as if the easiest solution as to what to mark them would be to put the number of thirty-seconds on each wrench so as to tell the helper to try the No. 24 wrench (socket or open end) on a nut. If he reports this too small tell him to try the 25, 26 or 27 wrenches in the order named. If he finds that a socket is needed for the other end of the bolt, he would then be able to pick out the necessary one without being told.

What is the usual practice where one does not wish to see the corners "chewed" off the nuts and wrenches?

For example, the Ford driveshaft housing studs are 13/32 in. and have a nut measuring 5/8 in., yet I recently heard a mechanic say that the necessary wrench was a 7/16 in., because the same wrench fitted the cylinder cap screws, and these were 7/16 on the shank.

This is only a minor item, but is important in breaking in a helper as well as inquiring the whereabouts of a certain wrench and, if there is any standard used in repair shops, I would like to do this little detail right.

First—How shall we mark them?

Second—What shall we mark them?

I shall be interested to watch the columns to find out what others are doing.—Herbert A. Fiske, New Bedford, Mass.

Readers: How have you solved this problem?—EDITOR.

## New York-Washington Truck Line

WILMINGTON, DEL., Aug. 3—Capitalized at \$250,000 and owning fifty-nine new enclosed trucks, the Beam-Fletcher Transportation Co. of New York has begun the operation of a regular daily freight line between New York and Washington via Reading, Pa., and Wilmington. A local connection has been made with the Wilmington Transfer Co., and its offices at Fourth and Pine Streets will be the local headquarters of the transportation company.

In view of the fact that this service will relieve the freight congestion here to some extent—this not being possible by rail, although the Pennsylvania and Baltimore & Ohio operate their New York and Washington service through the city, and there is a branch of the Reading terminating here, as well as direct connection with Norfolk and the South, via the Delaware Railroad—Mayor John W. Lawson has interested himself in the matter, and yesterday appealed to the New Castle County Commissioners to put the roads in proper shape for use. The main road north of Wilmington, connecting with Philadelphia, is shut off, being rebuilt, and the detours are in bad shape. However, the commissioners agreed to improve the western detour.

In order to call the attention of car owners to the war service regulations adopted by the dealers the ad at the left was run in Denver papers

## "FOR GOD'S SAKE, HURRY!"—CHOATE

### AN OPEN LETTER TO AUTOMOBILE OWNERS FROM THE TRADE IN DENVER:

That America may speed up in answer to the cry which the Allies have flung to us across the Atlantic, more rigid conservation of man power and material is vital.

The War Industries Board of the Council of National Defense at Washington has recommended and requested that all automobile establishments in the United States co-operate with it in this conservation along the following definite lines:

- 1—Elimination of unnecessary and free service.
- 2—Curtailement of Sunday work.
- 3—Elimination of night service.
- 4—Education of mechanics.
- 5—Adoption of the Cash Plan.
- 7—Elimination of waste.
- 8—Reduction in demonstrating expense.

The Automobile Industry in Denver is 100 Per Cent Patriotic! Just as we responded promptly and liberally to the Liberty Loans—the Thrift Stamps—the Y. M. C. A.—the Red Cross—the Recuperation Camp, so are we the first large city in the United States to say to Chairman Shaw, "We are with you to a man!" Regardless of the sacrifice to ourselves, individually or collectively, we are PROUD to again respond to the service of our Uncle Sam!

The undersigned members of the Automobile Trades Bureau have, therefore, agreed to the following:

ON AND AFTER MAY 12, 1918:

Our establishments will close at 6 p. m. week days and all day Sundays.

We will close all day Decoration Day, Independence Day, Labor Day, Thanksgiving, Christmas and New Year's Day.

No demonstrations or deliveries of cars will be made nights, Sundays or holidays.

The above applies to all branches of our business—salesrooms, service, repair and used car departments, parts, stockrooms, etc.

We earnestly request the co-operation of automobile owners and dealers. We are very sure that not one of you but would think the less of each of us were we unwilling to meet other lines of trade in the nation-wide policy of conservation, which is absolutely necessary if we are to win the war and win it quickly.

Thank you!

Willis Overland, Inc.  
Cadillac Motor Co.  
Sherman Auto Co.  
Miller-Ray Motor Co.  
Norton-Buch Motor Co.  
MacFarland Auto Co.  
Mountain Motors Co.  
Linger-Off Motor and Supply Co.  
W. W. Barnett.  
Tom Botticelli, Inc.  
J. L. Armstrong.  
A. H. Gode.  
Wariner & Cochran.  
The Lexington-Colored Auto Co.  
The Platt-Fawcett Motor Co.  
Earl Franklin Used Car Co.  
The White Auto Co.  
The National Motor Co.  
The Cole-Black Motor Sales Co.  
The Western Auto Supply Co.  
Denver Auto Goods Co.  
The Federal Rubber Tire Works.  
S. R. L. Motor Sales Co.  
The Auto Accessory and Speedometer Co.  
McCormick & Vetterlin.

The Colorado Motor Co.  
Then, Roberts.  
Rigdon & McFann.  
R. H. Baker Co.  
Ray B. Sutherland Motor Co.  
Foster Auto Supply Co.  
The R. E. Ramsey Electrical Co.  
The Rought-McRae Motor Co.  
Cole Motor Sales Co.  
Auto Clearing House.  
A. T. Wilson Auto Co.  
Walker-Platt Motor Co.  
Auto Salvage Co.  
Hovest-Hardy Motor Co.  
Brice-Motor Sales Co.  
The Herrick Motor Co.  
Jackson Motors Co.  
The Quinn-McGill Motor Supply Co.  
Stutz Motor Car Sales Co.  
Ransley-Yager Auto Co.  
Auto Sales Corporation.  
E. J. Johnson.  
Broadway Motor Sales Co.  
Exchange Motor Co.  
Carter Motor Co.  
Stanley Motor Carriage Co.

THE AUTOMOBILE TRADES BUREAU OF THE DENVER CIVIC AND COMMERCIAL ASSOCIATION

# Sell Trucks Amid Palms and Flowers

*McArthur Brothers of Phoenix, Ariz., Show Commercial Vehicles in Same Room with Passenger Cars*

GOOD taste in interior decoration, together with careful planning for efficiency, serves to make the new home of McArthur Brothers, Phoenix, Ariz., a model of its kind in the Southwest and one of the most up-to-date sales establishments west of the Mississippi River.

The new building, which was formally opened during the Arizona State Fair, contains 40,000 sq. ft. The first floor is occupied by the salesroom, 13,500 sq. ft., the general offices and information department, with the telephone exchange and the Delco light department. The interior is finished in shades of dark and light gray, the woodwork being gray oak columns with orange panels. The effect of this color scheme under the soft light of indirect lighting is most pleasing, and evoked many compliments from visitors who attended the opening.

The second floor is devoted to the used-car, accessory, advertising and serv-



*The new home of the McArthur Brothers in Phoenix, Ariz., decorated for the Arizona State Fair. It contains 40,000 square feet*

ice departments. Each used car is thoroughly overhauled, painted and put

in first-class condition before it is offered for resale. In the basement are the paint, garage, wholesale parts departments and the employees' clubroom. Operating between the basement and the top floor is the largest elevator in Arizona.

At the opening guests were entertained throughout the evening by a continuous moving-picture show in the employees' clubroom in the basement. Eight reels of pictures were shown illustrating the manufacture of Dodge, Packard and Nash cars, for which McArthur Brothers are the Arizona distributors.

The firm of McArthur Brothers is only five years old, yet the annual business is in excess of \$3,000,000. More than 2000 cars have been sold by the firm since it started in a small way in Phoenix in 1912. Its used-car business amounts to \$400,000, in addition to the new car sales.

McArthur Brothers have branch offices at Tucson, Douglas, Nogales, Mesa, Glendale and Chandler. They are also Arizona distributors of Delco light.



*In this tastily decorated salesroom are displayed Packard, Nash and Dodge Brothers motor cars and trucks*

## Ford Production Decreased

DETROIT, Aug. 3—Production of the Ford Motor Co. after Aug. 1 will be 350 passenger cars and 400 trucks a day, which is in accord with Government desires. It is estimated that at the close of business July 31, when the fiscal year ends, the year's production will be, in round figures, 677,000 cars. The estimate is based upon the fact that during the first 10 months and 24 days of the 1918 fiscal year the output of cars was 651,191. Since then production has been steadily decreasing. With an average daily production of 1000 during June and 750 during July, the remainder of the fiscal year would total about 25,750 cars.

This, added to the above figures, would aggregate 676,940 cars. How many Ford cars could have been easily disposed of can be estimated also from the fact that on June 10 the company had on its books unfilled orders calling for 89,242 touring cars, 9824 runabouts, 3013 coupes, 1675 sedans, 5234 trucks and 1619 chassis. Subsequent reports state the company as being 110,000 cars behind.

## Reorganize Motor Transport

WASHINGTON, Aug. 3—Further reorganization of the motor transport divisions of the army in this country contemplates two divisions similar to the

airplane service, with one purchasing and controlling production, and the other directing operation and training. The purchasing, procurement and production will continue under the Motor Transport Service headed by Col. F. Glover. The operations and training are planned to come under a new separate army division to be known as the Motor Transport Corps and to be headed by Major Barrett Andrews, who, it is reported, will shortly be promoted to a colonelcy. Further plans include division of the organization under Major Andrews into two sections, one headed by Lieut.-Col. W. D. Uhler, and in charge of operations and convoys, the other to be in charge of training.

The editor of this department is glad to answer questions. In sending queries, always include copies of contracts, notes, etc., to which you refer.

# THE LAW

By George F. Kaiser

As It Applies to  
Dealers  
Repairmen  
Garagemen

## Circumstances Alter Cases

That a motor-car driver is not necessarily guilty of negligence just because he backs his car from a garage without giving a signal or looking back is the decision in another case. In this case the officer of a dealer corporation, while taking the car from a garage into the street, knocked down and injured a pedestrian, who sued for damages.

The pedestrian claimed that the driver was negligent because he had not looked back and had given no signal.

The court decided that the driver's failure to give a signal or to look back did not of itself constitute such negligence as would make the corporation liable for damages, as in order to determine whether or not there is negligence the circumstances of each particular case must be carefully considered and the time and place of the accident must be taken into account.

## Question of Elevators in Garage

A novel case in which the question of whether or not an elevator in a garage was a passenger elevator was recently before the courts.

Suit was instituted against an insurance company on a policy which provided for double indemnity if the assured was injured or killed while riding on a passenger elevator.

It appeared that the assured was injured and thereafter died as a result of the injuries which were sustained while he was getting off an elevator in a garage building.

The assured had driven his car onto the elevator and had been hoisted seated in the car to the second floor, after which he backed his car off the elevator into the space in which it was stored.

He then asked the garage attendant to be permitted to ride down. When 4 ft. from the first floor he stepped off, his foot slipped through the open space at the bottom of the gate and underneath the elevator and was crushed.

The garage was a three-story and basement building. It was of concrete, situated on a street corner and about 65 x 120 ft. in size. On the first floor were the cashier's office, the salesroom for new cars, the washroom and stalls for car storage. On the second floor were an office, the salesroom for used cars, the vulcanizing room and stalls for car storage. On the third floor were the machine shop and general repair room.

The basement was used as a storage room for cars and for accessories per-

taining to the business of the company. The elevator extended from the basement floor to the third story. It was 8 or 10 ft. wide and 20 ft. deep. The sides and rear end were covered by a picket fence about 6 ft. high. The elevator front was entirely open. It was the only elevator in the building and furnished the only means of taking automobiles and other heavy articles to the basement and upper stories.

A stairway about 4 ft. in width provided with a handrail ran from the basement to the third story. A separate stairway extended from the office on the first floor to just outside the office on the second floor. On the right-hand side of the entrance to the elevator on each floor was posted a conspicuous notice as follows:

WARNING—THIS ELEVATOR IS USED ONLY FOR AUTOMOBILES AND FREIGHT. ONLY EMPLOYEES HAVING CHARGE OF TAKING AUTOS OR FREIGHT UP OR DOWN SHALL RIDE ON SAME. NO ONE WITHOUT WRITTEN AUTHORITY FROM US IS ALLOWED TO OPERATE SAME.

Patrons of the garage were accustomed to pass up and down the various floors both by the elevator and by the stairways. One of them testified that he rode or walked up or down as he wished. One of the proprietors testified that while the elevator was primarily used for carrying automobiles if a customer wanted to ride physical force was not used to keep him off.

The court decided that the mere fact that passengers were allowed to ride up and down at times did not make it a passenger elevator in view of the fact that it was constructed differently from passenger elevators in common use because it had no enclosed cage or doors for entrance and exit.

The claim for double indemnity was therefore denied.

## Could Not Make Contract

In an interesting Georgia case, an action was started to enjoin interference with the use of gas-filling tanks granted under a contract. The gas tanks were used in connection with a garage, and there were one in the building and two on the sidewalk in front of the garage. The lessee of the garage made a contract with another person which provided for the furnishing of gasoline to his customers. His landlord made a similar contract with still another person against whom an injunction was sought.

The court held that as the tenant had no right to make a sub-lease without the landlord's consent, and as no such consent to sublet had been given, the injunction could not be granted.

## Not Responsible for Unauthorized Employee's Action

In a recent case it was decided that a garageman was not responsible for an accident caused by the negligence of a chauffeur who had been hired, with a car, from the garageman's night watchman.

Suit was brought against the garageman by the widow of a man who had hired a car to recover damages for the negligence which it was claimed had caused his death.

The court held that the mere fact that the car had been standing in front of the garage when it was hired from the night watchman did not make the company responsible for negligence, as the night watchman had no authority to rent cars belonging to the company, and the particular car which caused the damage complained of did not even belong to the garageman.

The court said: "In and about every garage of any size there are many cars not owned or controlled by the garage people, and to hold them liable for everything that an unauthorized employee of theirs might do as the servant of someone else would be unreasonable."

## Guilty of Negligence

Where a person, attempting to leave a garage with his car, collides with another car and causes injury to a person who is engaged in repairing it, cannot give a reasonable excuse for the collision, he is guilty of negligence, was the decision of the court in another recent case.

It appeared that the party who was injured had been lying under his car, which was facing the north and was standing near the east wall of the garage where it was stored. The car in charge of the negligent operator was to the west of the other car and a short distance back of it. While the second car was passing the first one it collided with it and the man who was doing repairing was struck and injured.

As it appeared that there was plenty of room to pass the standing car if the moving car was carefully managed, the court held its operator was guilty of negligence if he could give no reasonable excuse for the collision.



# Automotive Equipment

## GUIDE TRACTOR LAMP

A field tractor lamp for night plowing and other night field work. It is of special heavy-duty construction and made dust and water tight. A lens, specially designed for the purpose, throws a broad, clear field of light about 120 ft. forward and spreads to about 60 ft. at direct right angles to the tractor. The front diameter is 7½ in., and the lamp can be furnished with prop standards as well as the extended arm type. —Guide Motor Lamp Mfg. Co., Cleveland.

## FAWSCO

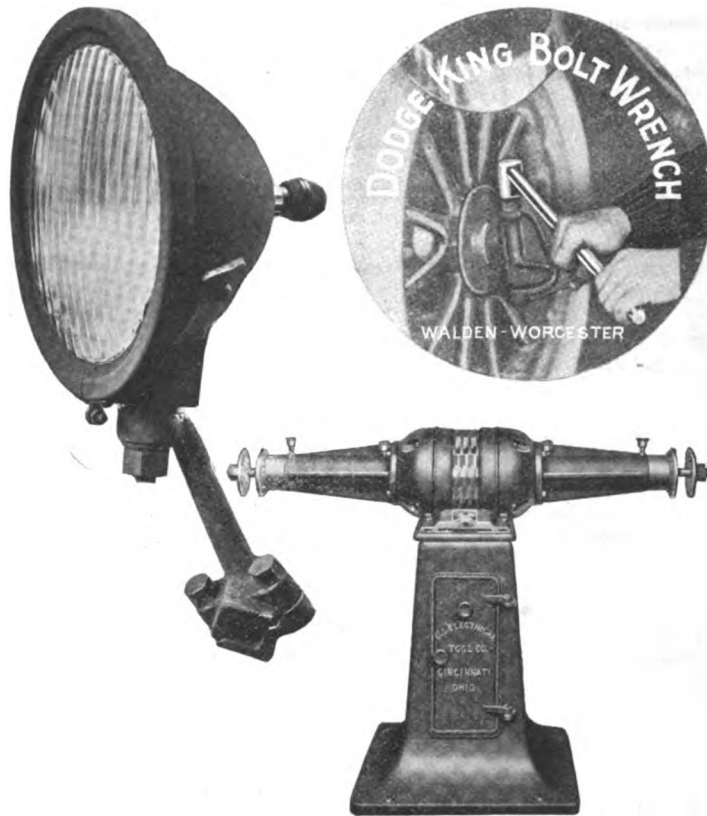
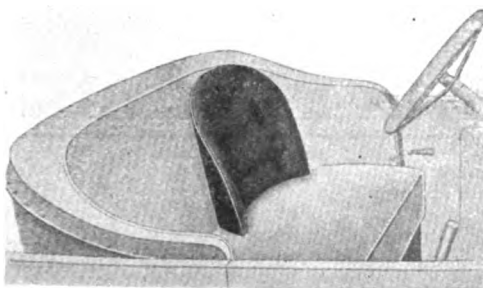
J. H. Faw, Inc., New York City, has increased the price of the FawSCO Improved Combination Oil Cock Wrench Gasoline Gauge and Cleaner from 35 cents to 45 cents. The trade discount to dealers is undisturbed.

## STEVENS DISPLAY CABINET

A display cabinet or section which is twice the size of the standard Stevens section. The upper part is the display section and is inclosed with two glass doors, the boards being covered with felt. Back of these panels, which turn on hinges, are shelves with ample room for a liberal supply of the stock displayed. The display section in conjunction with the base unit containing the drawers is known as assembly No. 293. Price to dealers, \$61.75. —Stevens & Co., 375 Broadway, New York City.

## COMFO-LUX BACK REST

A back rest that adjusts itself to the form and fills out the space between the seat cushion and the back and shoulders of the driver. Claimed to eliminate backache and strain caused by long drives. Price \$3, all charges prepaid. —Comfo-Lux Back Rest, Ottawa, Ill.



## DODGE KING-BOLT WRENCH

A king-bolt wrench for the Dodge car, especially made for this particular bolt, and having a handle sufficiently long to get the required leverage. Made of tool steel. Price \$2.50. —Walden-Worcester, Inc., Worcester, Mass.

## U. S. ELECTRIC BUFFERS

Electric motor-driven buffers in which the motors are an integral part of the case. The motors are wound for either direct or alternating current and the shafts revolve on four S. K. F. ball bearings. Made in 1, 2, 3 and 5 hp. The machines may be used with wire, canvas or any kind of buffing wheels. The motors are made by Westinghouse. —United States Electrical Tool Co., Cincinnati, Ohio.

## HERZ PLUG WITH NEW MINERALIZED MICA CORE

The Herz Plug (Bougie Mercedes) is now made with a mineralized mica core, a tube of Ruby mica being built up around the central electrode to a thickness of 1/16 in. Ruby mica washers are in turn built up around this tube and compressed under very high pressure. So tightly are the washers compressed that they become practically one solid piece, and do not allow oil or carbon to get between them. An oil guard of peculiar shape and made of copper prevents oil from splashing into the cavity of the plug. Made in ½ in., S. A. E. and metric threads. Price \$1.50; special types \$2. —Pro-Mo-Tor Fabricating Corp., 245 West Fifty-fifth Street, New York.



## POWERS CORK-FACED TRANSMISSION LINING FOR FORDS

A cork-faced transmission band lining for Fords. It is made of strong, solid-woven webbing with Grade A natural cork sewed on the inside with a heavy thread. It is said to have a velvety grip and to wear very slowly. Three pieces cut to the proper length are packed in a box together with the necessary rivets. One hundred boxes are packed in a carton weighing about 50 lb. Price \$2.85 per set. —Powers Mfg. Co., Waterloo, Ia.



# Rural Motor Express

## *The Truck Dealer's Opportunity*

(Continued from page 8)

"Four or five lines are operating out of Syracuse, N. Y. Further work of organization is going on.

### Canvassing Situation in Omaha

"In Omaha, Neb., questionnaires have been sent broadcast over the state to the farmers, locating the business in sight, with an idea of laying out routes.

"In Webster and Dudley, Mass., rural motor lines are in operation to Worcester, Norwich and Southbridge, carrying food and other products in store-door delivery.

"Flint, Mich., is tabulating every farmer in the state, his transportation needs and where located. The routes take in Adrian, Alma, Ann Arbor, Bay City, Clarkston, Clio, Davidson, Detroit, Pontiac, Saginaw and various other points. These routes are grouped and served by different lines. They plan to give each farmer along the route a kind of show card, to be displayed in the windows, similar to that used by express companies, informing the passing truck that he has goods to ship.

"In Jacksonville, Fla., a strong organization is at work on plans for establishing lines.

"In Indianapolis cards are being sent out to farmers and business men, and organization is proceeding very nicely.

"The Highway Transport Committee in Denver has been very active, and their work has resulted in lines operating out of different centers like Pueblo, etc.

"In Deadwood, S. D., a line is being started to Sundance, Wyo. They can deliver goods by truck in five hours, whereas by railroad, on account of round-about billing, it takes from three to five days.

"A large company is organizing lines running out of Minneapolis, operating over short and long distances.

"In Mason City, Iowa, routes ranging in length from 80 to 150 miles have been laid out and tested, and several lines are now in operation from this point. Leading business men have organized a company with \$50,000 paid in, hauling produce, eggs and poultry and all other products.

"The Newark, N. J., Highway Transport Committee has perfected a strong organization, and we expect some results very soon.

"The Albany, N. Y., Highway Transport Committee recently held a meeting, at which were representatives from all points. Much work is being done, and although this only happened about a month ago, there are evidences that lines will be in operation before many weeks have elapsed.

"A line is in operation from New York to Stamford, Conn.

"A line has just been started in Portland, Me., taking in all districts. Other activity is in progress.

"The Louisville, Ky., Automobile Dealers' Association has a line which is about to start."

The Flint, Mich., Board of Commerce told the N. A. C. C. that: "Plans for the future include the immediate tabulation of every farmer and his transportation needs, located on or in close proximity to the various routes between Adrian, Alma, Ann Arbor, Bay City, Clarkston, Clio, Davidson, Detroit, Farmington, Fenton, Flint, Holly, Imlay City, Lansing, Lapeer, Linden, Midland, Milford, Owosso, Pontiac and Saginaw and all intermediate points.

"This completed, we will make various groupings, each group to be served daily by one or more trucks on that particular route. In this manner we will relieve for farm duty the farmer who is now losing valuable time and retarding production by semi-weekly or even daily trips to the city. We plan to give each farmer and every business man along the route a kind of show card, something on the order of ice cards displayed in the windows of the householders in every large city, or about the same that the various express companies formerly distributed to their shippers for display as a stop signal for the passing express man, which the farmer will display on his mail box along the route and the business man at some other con-

spicuous point as a signal to the passing truck man that traffic is offering."

In a letter to the committee Senator B. A. Cummings of Idaho said: "There is great need of the establishment of a route between Arbon Valley and Michaud, an Oregon Short Line station eight miles west of this city. There are several hundred settlers in this valley, and it is estimated that they will raise 500,000 bushels of wheat this season. Their crops as well as all their supplies have to be hauled from 20 to 30 miles.

"The handling of this grain presents a big problem this fall, due to the fact that they will have an unusually large crop, and if the farmers have to devote their time to hauling it, it will mean curtailing the acreage for next year by perhaps 50 per cent."

After Senator Cummings reported interest in the rural express proposition, the committee requested its manufacturers to ask their dealers in Idaho to get in touch with the senator and give him whatever assistance they could in the matter. A number of dealers responded in a very favorable way, and there is great expectation as to rural express routes in that part of the country.

The Portland Cement Association, with headquarters in Chicago, is taking a very active interest in the rural express movement, and is sending out a great deal of literature and information on the subject and interest is growing everywhere. Wherever the Rural Motor Express idea has been put into operation the estimated benefits to truck dealer, farmer, city man and truck operator have been fully realized.

## *Maxwell Truck Makes Coast-to-Coast Trip*



In order to advertise the truck idea generally and the Maxwell one-tonner in particular, the Maxwell company sent one of its trucks from San Francisco to New York, leaving July 17 and arriving August 3. It was driven by Ray McNamara, a veteran cross-country driver, and was styled the Maxwell Military Express, because it carried a ton of goods for the army in France. The only repair was a fan-belt adjustment and the event is regarded as highly satisfactory from a mechanical and advertising standpoint.

# Mix-Up on N. A. D. A. Conservation Plan

(Continued from page 11)

tion and has forced his customers into line and has brought his branches into the War Service program.

Immediately upon receipt of the statement of the Fuel Administration officials President Vesper, who also is Chairman of the War Service Committee, took up the question with the War Economics Board, under which his committee works, and urged a consistent program. *This committee has at all times expressed sympathy with the fullest scope of the work.*

At present it is hoped that the patriotism and pride of the automobile trade will keep the industry entirely in line despite the opportunity for a break in the oil station section, which in many cities means sale of supplies and some repair work.

"There seems to be some misunderstanding in conception regarding the night and Sunday closing recommendations made by the War Service Committee," said Vesper, "particularly as it applies to gasoline and other supplies which might indicate that the curtailment of the general use of automobiles is contemplated. Nothing is farther from the facts, as the object of the suggestions when fully in force will tend to foster and encourage the UTILITY use of an automobile to the fullest extent, and will cater to those who use cars for such purposes."

As night and Sunday usage of an automobile is mainly for pleasure purposes, there is naturally a feeling that this can be reduced without any great hardship on the part of the owners of the cars, and it is freely stated that practically all other lines of industry are

willingly curtailing the unnecessary from their business, and it is therefore only equitable that the automobile industry do likewise.

"The keeping open of service stations and oil and supply depots requires labor, which is manifestly for the purpose of making it easier to use automobiles for pleasure purposes, and as labor is one of the scarcest commodities at this time every saving in this direction is not only necessary but imperative.

*"There is plenty of gasoline and oil for automobile use if it is rationally and sensibly used, but there will not be enough if the automobile user continues to waste it by using his automobile unnecessarily. Therefore it behooves not only the dealers, but the owners as well, to conserve in this direction as much as possible, not so much on account of present necessity as against the possibility of the future.*

"Whatever small additional trouble it may be for the owner to obtain supplies on Saturday is so negative that no patriotic owner will object. Sensible, reasonable use of the automobile on the part of the owner, and a reasonable, sensible attitude on the part of the automobile dealer, garageman, supplyman and oil station operator is in itself an absolute assurance that no drastic order will be given requiring some limited use of automobiles, or of gasoline, oil or other supplies."

"The possibility of a 'seven motorless Sundays' order, or any similar edict is very remote, and the closing movement on the part of the industry indicates very plainly its sincere desire to help in every way possible to bring about a speedy conclusion of the war, and shows without question that the automobile industry is willing to conserve in all of the material that it uses in the operation of its product, as well as save the manpower it requires to maintain the establishments considered necessary in the past."

## Where's the Nigger?

Editor Motor World: There has been so much of a conflicting nature in reference to the night and Sunday closing down on sales and service in connection with the automobile industry, and it has had such fresh complications in the past few days that I would like to have space in your interesting journal for a description of some of the woes resulting from the mix-up in this city.

The whole trouble is due to an evident lack of co-ordination between the War Industries Board and the Conservation Division of the War Industries Board, and the wishes of these two as given to F. W. A. Vesper of the N. A. D. A., and the interpretation put on these wishes by Mr. Vesper and transmitted to the trade

generally. Please note that the term "dealers" is generally used in the close-down discussions, although Mr. Vesper has declared that it affects garages, filling stations and service stations of all kinds.

Just as the Indianapolis Dealers' Association was lined up 100 per cent on the closing proposition and had procured the co-operation of garages and all sorts of service stations, lo and behold, the War Industries Board and the Fuel Administration declared that no ban had been placed by them on the night or Sunday sale of gasoline and oil and that garages and service stations putting such ban on were acting without the authority of the aforesaid national boards.

It so happened that we had a rousing meeting in Indianapolis on Thursday night. As I was formerly a newspaper man, I wrote the story of that meeting—in which it was agreed to close up everything effective at 6 p. m. the following Saturday—and that story was printed on page 1 of the Indianapolis Star, signed by my name, the following morning. On page 2 of the same issue was a little less-than-a-stickful item under a one-line head as follows:

### OIL SALES NOT LIMITED

WASHINGTON, Aug. 1—No orders restricting the sale of gasoline or oil for automobiles has been issued, was the text of a joint statement to-day by the War Industries Board and the Fuel Administration. Local automobile dealers' associations refusing the sale of their products on Sundays and holidays are acting without governmental authority, it was declared.

That was a body blow to conservation measures in this city. As my first-page article declared, the action of closing was due to the request of the Conservation Division of the War Industries Board as transmitted through Mr. Vesper of the N. A. D. A., and the entire proposition was a patriotic move on the part of the dealers and service station men of all kinds—this little Associated Press dispatch almost buried in another page of the same paper PUT THE KIBOSH ON THE WHOLE SMEAR AND SHOWED US UP AS "LAMBYERS"—or worse.

The opposition in the industry immediately got busy. Papers were circulated among garages and filling station men for signature, indicating the intention to disregard the agreement to close. On the first Sunday—to-day, Aug. 4—probably half of the garages and filling stations are open and doing business as usual. I have one among the larger garages of the city and I complied with the closing agreement, and so did most of my larger competitors.

But you see, the beans have been spilled. The chances are that by next Sunday, UNLESS SOME POSITIVE DIRECTION IS GIVEN FROM AN AUTHORITATIVE SOURCE, the town is apt to be wide-open again, and all the efforts to organize and put in force what most of us regarded as a potential order will have been rendered abortive.

Can you not find the Senegambian in this particular pile of cordwood? If you can get Mr. Vesper and the conservation division in line on this thing it will be a blessing to the industry. There is surely something rotten and it's a good deal closer to us than Denmark.—Harry K. Stormont, North Side Garage, Indianapolis, Ind.

### Dealers Are Puzzled

BOSTON, Aug. 3—Some of the Boston motor dealers are a bit puzzled now following the statement from Washington on conservation and the reference made to it by President F. W. A. Vesper of

the N. A. D. A. at the big meeting here July 26.

President Vesper told how dealers in Western cities were carrying out the conservation program, and the effect of one garage doing the general night business, together with Sunday closing, etc. Today there appeared in the papers a statement dated Washington which said that both the War Industries Board and the Fuel Administration had denied making any order that dealers should not sell gasoline or oil on Sundays or holidays or after 6 p. m. The impression conveyed by President Vesper was that it was to be a nation-wide movement for conservation suggested by the dealers' organization and approved by the boards at Washington, and that all would have to get in line. Nothing had been done in New England to put the plan into effect as yet, but the dealers were considering how it was going to be worked out. With Washington officials making such a statement it will be an easy matter for the man who does not want to join the movement to break up the plan if it is inaugurated here.

#### 250 Members Last Week

ST. LOUIS, Aug. 5—Two hundred and fifty members were added to the N. A. D. A. roster this week. Half a dozen communities sent in a dozen names each and the remainder were scattered to the four corners of the country. Maine was well represented as a state and Seattle was one of the leaders. It was not expected that Denver would contribute another block of a dozen, but they came. Florida and Georgia continued the campaign in those states and the Kansas work goes on.

Much of the memberships obtained in the recent eastern drive have not yet been tabulated at the president's office, and for that reason the count there is not entirely accurate. Lists of memberships are filed with the secretary's office at Milwaukee and are reported to the president's office at stated intervals. The same is true of the office of Executive Secretary Peake at Kansas City. At an early date it is hoped to canvass the lists of the three offices and issue a definite statement as to memberships. A considerable increase is expected to come from the recent eastern campaign. The estimate to date is more than 3000 members.

#### Tire Men Co-operate

LOUISVILLE, KY., Aug. 3—The Louisville tire dealers have finally decided to close at 6 p. m. week days and all day Sundays. The new policy was inaugurated Aug. 1. Several weeks ago, after the automobile dealers adopted the recommendations of the War Service Committee, the tire dealers announced through advertisements in the daily papers that they would close after 6 o'clock in the evening and on Sundays. Two of the dealers, however, withdrew from the agreement when they learned that the gasoline stations were not included and the rest followed.

## Garages for Conservation

Editor Motor World: In regard to the garages and filling stations co-operating with the national association's conservation movement I most emphatically reply in the affirmative. This has been my opinion right along and I am fortified in this position by the able address and sound reasoning of President Vesper at the Chicago convention this week.

The scope of these recommendations is broad enough to include every dealer engaged in the automobile business and allied lines. The garages, accessory stores, gasoline filling stations and, in fact, all dealers who are directly supplying the needs of the motorist in operating his machine, are charged with the patriotic duty to observe these recommendations.

#### Business Must Be Readjusted

The whole thing in a nutshell, as I see it, is simply this: The automobile sales and service business must readjust itself and conduct its business in a way so as to prove conclusively that it is actively co-operating with the Government in conserving man power and materials. The most evident way in which the automobile trade can show where it stands is by voluntarily refusing to encourage the use of the automobile at times when it is being used for recreation purposes, and it does not require any lengthy argument to convince the ordinary individual that his car is not used for business purposes at night, Sundays and holidays. This being the case it is only fitting that the automobile trade should refuse to encourage the use of the car at these times, and therefore keep its places of business closed nights, Sundays and holidays.

This regulation would not work a hardship on any one who has occasion to use the car during these times because he could see to it that his supplies were purchased during regular business hours. There is no reason why the automobile business should be conducted like a peanut stand or a shoe-

shining shop. By complying with these recommendations it not only conserves money in the pocket of the automobile owner, but it also places the automobile business on a higher plane, tending to eliminate losses and generally tends to improve the business, thereby avoiding a great many of the business failures which have heretofore taken place in this line.

These are the results that will follow if the recommendations that have been approved by the War Economy Board of the National Council of Defense are adopted and observed by the automobile trade.

#### Recommendations Should Guide

I was somewhat peeved over the reply you made to a certain letter requesting your opinion as to whether a garage should observe these recommendations. Your answer appeared in the July 10 issue. The garageman in my opinion is the one who should be guided by these recommendations more than anybody else engaged in the business, because he usually runs a repairshop in connection, sells accessories, tires, supplies and gasoline, and very often has a car which he is selling either under direct contract or sub-contract. The garageman is going to suffer more than any other if the Government is obliged to issue orders regulating this business. It is to his interest to readjust his methods and place his business on a war-time basis, and even if this would entail a slight loss for the present it would be far better to show his patriotism and loyalty than to force the Government to issue drastic orders regulating the automobile business.

Here in the Tri-Cities we are going to do our utmost to bring about a uniform observance of these recommendations by all the dealers. I am firmly convinced that this is the least that the automobile dealers and allied lines can do to help in the nation-wide conservation movement.—Victor G. Kropf, Commissioner, Tri-City Automobile Trade Association, Davenport, Iowa.

## Chicago Holds Big N. A. D. A. Meeting

ONE of the biggest meetings held since the 5000-in-90-days campaign started was held last Tuesday night in Chicago, where between 300 and 400 dealers from Illinois, Indiana and Iowa gathered in the roof garden of the La Salle Hotel to hear the stories of President F. W. A. Vesper and Executive Secretary E. E. Peake.

More than 200 dealers have joined from the Chicago district. All the eligibles at the meeting enrolled in the N. A. D. A.

In addition to the stories of Vesper and Peake, there was a plea for good roads in Illinois by Henry Paulman, treasurer of the Chicago Automobile Trade Association. There is an issue of \$60,000,000 to be voted on, the object of which is to "pull Illinois out of the mud,"

and the support of all dealers is urged.

George H. Bird, president of the Chicago association, urged dealers to get in line with the N. A. D. A. and help it finish the good work it has so ably begun.

Omaha held a meeting Aug. 1 and there will be a gathering of all the Nebraska dealers late this month. Lincoln held a meeting the evening of Aug. 1, and the dealers in both cities have affiliated—Omaha with 50 and Lincoln with 30.

The dealers in Seattle have sent in their memberships in a block.

The Rocky Mountain Automobile Trade Association is getting ready for a roundup meeting, and will stage it as soon as Vesper and Peake can arrange speaking dates.

Vesper and Peake plan to make a trip



to the Pacific Coast in September, and it is anticipated that the Coast dealers will hold meetings that will surpass any yet held. There is already organized in California an association of about 2500 members, but which is not affiliated with the N. A. D. A. There are also strong associations in other Coast sections. The Denver meeting will probably be held about the same time.

The Little Rock Automobile Dealers' Association is organizing Arkansas and at the same time building up the N. A. D. A. and expects to secure at least 200 members.

Individual applications are being received from all sections, the dealers everywhere showing their desire to support the movement.

Twenty have been received from Denver. Louisville, Ky., has sent in its entire membership. The Kansas City territory, which later plans a meeting in honor of Peake, who is secretary-treasurer of the Kansas City association and well-known throughout the Southwest, is turning in from 15 to 20 members a day.

In previous listings of cities that have joined the N. A. D. A. the Brooklyn association was included with the general New York membership. This is not strictly correct, as the Brooklyn association is entirely separate and was about the first Eastern organization to affiliate in a body since the campaign began. Brooklyn is working on the conservation plans. D. D. Martin, of the Martin-Evans Co., is handling the accessory side of the trade, and the Brooklyn Garage Owners' Board of Trade has named its own committee for that division.

The Tri-City Automobile Trade Association, covering Davenport, Rock Island and Moline, has a meeting on this week Tuesday evening, at which the conservation plans will be explained to the entire trade.

Creston, Iowa, formed the Creston Automobile Conservation Bureau two months ago and is going fine. The evening of July 29 86 of the trade were banqueted in the dealers' clubroom. Their women employees served the banquet in order that they might get the spirit of the movement and help the dealers in executing the conservation plans. The officers are: President, Karl D. Seberger; vice-president, Shirley Leavitt; secretary-treasurer, Carl Nord; executive committee, Percy Pottinger, Shirley Leavitt, Leo J. Sheridan and Carl Nord. They have done considerable to harmonize the trade in southern Iowa and have named a committee to meet with garages that do not understand the conservation plans. At the banquet addresses were made by Dean Schooler, president of the Des Moines association, and H. W. Edaburn of Creston. James F. Bryan was toastmaster.

#### N. A. D. A. Growing in New England

BOSTON, Aug. 3—The committee which was organized to get behind the movement to add many names of New England dealers to the National Automobile Dealers' Association has decided

to continue its work along those lines, and during the past week the members got in touch with dealers in some of the big cities who came in, asking if they had got any prospects in their home places since going back.

The result of keeping on the job was to get additional names, so that now the total is very close to 500. It will go over that figure shortly. There had been some confusion about the membership, some of the truck dealers believing that unless they had passenger cars also as a line they were not eligible to membership. This has been ironed out and so a number of exclusive truck men have come into the organization.

The Boston committee now proposes to appoint sub-committees in all the large centers to cover any new dealers who may enter the field, and to try to convert those who still remain outside the fold.

#### Statement from War Industries Board

(Continued from page 10)

An interview to-day with M. C. Copeland, secretary of the Conservation Division of the War Industries Board brought forth an official statement which, however, does not throw any great amount of light on the situation. Apparently the oil companies have set up an opposition to the Sunday closing of gasoline filling stations and are indirectly responsible for the newspaper statement that has caused all the commotion. Several days may elapse before the Conservation Division and the oil interests are able to arrive at a definite agreement or disagreement. In case of disagreement and the continued refusal of the oil companies to co-operate in Sunday closing a considerable portion of the War Service Recommendations of the dealers may be abandoned. The statement from the Conservation Division follows:

"The joint statement recently issued by the War Industries Board and the Fuel Administration points out that no order or recommendation has been issued by the government regarding the sale of oil and gasoline and it also points out that 'It is not intended to interfere in any way with the activities of automobile dealers' associations or others who after consideration of local conditions may seek to bring about some limitations of the hours during which gasoline and oil shall be sold to the public.'

"A conference was held with representative automobile dealers last December at which it was pointed out that under present conditions it is highly important that every practical means of conservation be put into effect in order to conserve labor and materials. As a result of the suggestions made at this conference, the War Service Committee of Automobile Dealers drew up a program and undertook an extensive educational campaign among automobile dealers. We expressed sympathy with the general purpose of this plan. Our interest in the matter was stated in a letter sent to the committee on April 23, in which we said:

"We note from your letter that you

have your plans under way for an extensive educational campaign among automobile dealers. Your committee is going ahead with this so vigorously that, for the present at least, we shall leave the matter entirely to you and we are very glad that you are able to relieve the government of any burden in this connection. So far as the details of your program are concerned we, of course, cannot express an opinion since we have not gone into the subject ourselves, and it is only proper that your committee should assume the full responsibility for the program that you have formulated.'

"We are, of course, still interested in seeing the retail automobile trade effect all possible economies that they can, for it is the duty and the privilege of every citizen of the United States to eliminate all wasteful and unnecessary practices in his business. As you will note, however, it was left entirely to the industry to do what they could to help. Consequently no order or recommendation was issued by the government."

#### Ohio Deep in Member Drive

COLUMBUS, Aug. 3—The Ohio Automobile Trade Association is deep in its state-wide campaign to secure new members and to organize local organizations. Victor Moon, commissioner of the association, recently attended a meeting at Waverly, Ohio, which was attended by two of the three dealers of the village.

#### From Wilmington Too

WILMINGTON, DEL., Aug. 5—Charles H. Ten Weeges of Wilmington, fuel administrator for Delaware, has issued the following statement:

"The attention of the War Industries Board and of the United States Fuel Administration has been called to the wide prevalence throughout the United States of a mistaken impression that some order or recommendation has been issued from Washington with respect to the sale of oil and gasoline. In some places local automobile dealers' associations have even issued circulars laying down the rule that dealers in oil and gasoline must make no sales of these products on Sundays and holidays or after 6 p. m. on other days, and stating it is now an order from Washington.

"No such order or recommendation has been issued by any governmental authority or with governmental approval. The Fuel Administration has urged that wasteful practices in the use of oil and gasoline shall be stopped and all reasonable measures of conservation shall be observed. No limitations, however, have been placed upon the sale of these products.

"It is not intended to interfere in any way with the activities of automobile dealers' associations or others, who, after consideration of the local conditions, may seek to bring about some limitation upon the hours during which oil and gasoline shall be sold to the public; but it is desired that it be clearly understood that no orders or recommendations have been issued by any governmental authority upon this subject."

## Accident Kills Steam Car Pioneer, Stanley

**Car Overturns and Pins Francis E. Stanley Under It—Long in Motor Car Business**

NEWTON, MASS., Aug. 3—Francis E. Stanley, one of the Stanley brothers, famous pioneers of the steam carriage industry, died as a result of an automobile accident near Ipswich, Mass., on July 31. Mr. Stanley was returning from a trip to Maine, and was in the car alone at the time. The road at the place where the accident occurred is highly crowned, and Mr. Stanley is reported to have driven at a considerable speed. The car slewed and overturned.

The mention of Stanley's name carries with it memories of the early days of automobile history. The Stanleys originally came from Maine, having been born (the brothers were twins) in Kingsfield, Franklin County, on June 1, 1849. At one time they lived in Lewiston, Me., where they learned of the work of an early steam vehicle experimenter, E. F. Fields. During his youth F. E. Stanley worked as a carriage-maker, portrait artist and photographer, and later the two brothers engaged in the manufacture of photographic dry plates at Newton, Mass.

Their attention was again directed to automobile development by an exhibition at the Brockton, Mass., fair, in the fall of 1896. They set to work to build a steam runabout, and produced a machine light in weight, attractive in appearance, silent in operation and comparatively powerful.

The first machine was sold in August, 1898, and its success induced the Stanley brothers to make plans for manufacturing the vehicle on what was then regarded as a large scale. By the end of the year they had a lot of 100 cars going through the plant, and more than this number had been sold. Some of the major parts were being made by outside concerns, and the work at the Newton plant, which comprised a frame building at which the experimental work had been done, and a machine shop directed during the spring of 1898, was practically limited to assembling. However, the various parts were all designed by or under the direction of the Stanley brothers, who also supervised the manufacturing operations.

In the spring of 1899 John Brisben Walker, at the time publisher of the *Cosmopolitan* magazine, purchased from the Stanley brothers the right to their steam car, as well as the plant at Newton, Mass., and secured the services of the Stanleys for a period of one year. The deal, which involved a cash payment of \$250,000 to the Stanleys, occasioned much discussion at the time on account of the large sum involved and because the Stanleys had no basic patents on their vehicle.

Shortly after having acquired the



FRANCIS E. STANLEY

Stanley rights Mr. Walker disposed of a half interest in them to Anzi Lorenzo Barber, an asphalt magnate. For a time Messrs. Walker and Barber managed the business jointly, but later two companies were organized to manufacture the little steamers, the Locomobile Company of America, of which Mr. Barber was president, and the Mobile Company of America, of which Mr. Walker was the head, and both began to manufacture runabouts of substantially identical design, known as the locomobile and the mobile respectively.

After their year's contract with the locomobile company had expired the Stanley brothers set to work to bring out a car of improved design, and eventually they bought back the factory plant in Newton, which had gone to the Locomobile Company in the deal whereby the latter took over the Stanley business. Although there was a serious slump in the demand for steam cars not long after the Stanleys had started again under their own name, they made a success of their new venture, and the Stanley steamer is still being produced today, many improvements in its design having been introduced in the course of time.

About a year ago the Stanley Car Co. was reorganized, and the two brothers retired from its active management.

*This is the special Dodge delivery car that has been put in service by the Colt-Stratton Co. on a Stamford-New York Rural Express Route*

## Rural Express Route Is Started by Dealer

**Colt-Stratton Co. Operates Line Between Stamford and New York—Special Car Used**

NEW YORK, Aug. 3—The Colt-Stratton Co., Dodge distributor, has established a rural express line between New York City and Stamford, Conn., touching in the Bronx, Mount Vernon, New Rochelle, Port Chester and Stamford. The line makes daily round trips starting from Stamford about 9 o'clock in the morning, arriving in New York about 12.30 and returning to Stamford again, leaving New York around 3 o'clock. The car is a Dodge commercial car with a special body with package rack on the top and a ladder to gain access to it. The stations along the road are the Dodge sub-dealers and the truck stops at each one of these on its way in and out from Stamford.

One of the unusual features of this express route is the shopping service. Customers along the line can have a shopping service rendered. If they desire anything purchased in New York they give an order to the driver and during his stay in New York, he goes around and purchases the different things desired and brings them back. A charge of 75 cents for each purchase plus the amount of freight is made on this kind of goods. The nominal charge which has been adopted is two cents per hundred-weight per mile. The car and its contents are insured.

### Columbus Repair School Progresses

COLUMBUS, Aug. 3—The school for mechanics now being conducted by the Columbus Automobile Trade Association has reached a point where it will be divided into sections for practical shop experience. So far the students have been taken to lecture rooms, where experts have been explaining the various vital parts of automobiles. The class will be split up into a number of groups and placed in repairshops of automobile and truck dealers so that pupils may secure necessary practical experience. The mechanics are expected to enter the service of local agencies and repairshops.



## And Now the Work on the Tax Bill Begins

### The House Has Drafted a Schedule but the Senate Finance Committee Doesn't Agree on It

WASHINGTON, Aug. 1.—A heavy excise tax, a tax of 10 per cent on new cars and 5 per cent on new trucks, and a tax on gasoline were written into the new revenue bill by the Ways and Means Committee yesterday. The excise tax includes cars, trucks and motor cycles and will be in the form of a Federal license tax, and in the case of cars and trucks is graduated according to the original cost of the machine. The tax on motor-cycles is \$5 regardless of the original cost.

The graduated tax, which will yield about \$125,000,000 annually, will operate under the following schedule:

Not over \$500, annual license.....	\$10
Above \$500, not over \$750.....	15
Above \$750, not over \$1,000.....	20
Above \$1,000, not over \$1,500.....	30
Above \$1,500, not over \$2,000.....	40
Above \$2,000, not over \$2,500.....	50
Above \$2,500, not over \$3,000.....	60
Above \$3,000, not over \$3,500.....	80
Above \$3,500, not over \$4,000.....	100
Above \$4,000, not over \$4,500.....	120
Above \$4,500, not over \$5,000.....	140

An additional \$40 for each \$1,000 of original cost above \$5,000.

The tax on gasoline of 2 cents per gal. is expected to raise \$45,000,000. The committee believes a gasoline tax will lead to a considerable conservation of gasoline, reducing its needless use in passenger cars. This is the sole purpose of placing this gasoline tax.

A tax on used car sales by a tax on dealers is also contemplated by the Ways and Means Committee. Chairman Kitchin thinks that some method of taxing used car sales will be found as they would escape taxation under the methods already agreed upon.

The graduated tax on cars and trucks undoubtedly will encounter a struggle in the Senate, where the Finance Committee has stated that it will never agree to a tax of this sort, which is unfair because of the reduction in prices of cars affected during the last few years by better production methods and lower cost of materials. They state that the plan is unfair to the motorist who owns a car several years old to have to pay a higher tax than the motorist who owns a car two or three years old. This should be reversed, states the Finance Committee.

The graduated tax on trucks is tentative. There will probably be a lower graduated scale arranged, to apply to trucks only, as the committee has displayed some understanding of the utility of the motor truck, having applied but 50 per cent of the car tax through the manufacturer to the motor truck.

The tax on gasoline is to be paid by the manufacturer or producer, but it is expected that it will be passed on to the consumer by them.

## Sales Opportunity

There is a great opportunity for the sale of between 300 and 400 motor trucks to haul livestock to the Cincinnati, Ohio, stockyards, for only 15 per cent of the available livestock originating within trucking distance of the Queen City is to-day hauled by motor truck.

In all, 1,962,207 head of cattle, hogs, sheep and calves were received at the Cincinnati Union Stock Yards during the year 1917 by motor truck, rail, wagon, and by driving in on the hoof over the roads.

Forty-six per cent of this total, or 902,614 head, originated within a radius of 50 miles of Cincinnati, or within a 4 to 5-hour truck haul. Yet of the total of 902,614 head which are available to be hauled by motor truck, only 139,900 were brought in by the truck method during 1917, leaving an undeveloped market for truck use and sale of 762,714 head.

From 2 to 3-ton trucks have been found best suited to the work.

## Price Changes

### Paige Prices Advance

DETROIT, Aug. 1.—The Paige-Detroit Motor Car Co. has to-day advanced the prices of all its models as follows:

Model	New Price	Old Price
Six-30 .....	\$1,515	\$1,395
Essex Six-55 .....	1,985	1,830
Larchmont Six-55 .....	2,090	1,950

### Oldsmobile Increases

LANSING, Aug. 1.—The following are the new prices of the Oldsmobile models:

Model	New Price	Old Price
37 .....	\$1,395	\$1,295
45 .....	1,700	1,550

### Scripps-Booth Advances Prices

DETROIT, July 31.—The Scripps-Booth Corp. will advance the prices of its cars Aug. 1, as follows:

Model	New Price	Old Price
T-Six-39 .....	\$1,385	\$1,195
Roadster Six-40 .....	1,385	1,195
G-Four .....	1,065	985
The eight-cylinder remains the same—\$1,285.		

The price of the new sedan and coupé, sixes, models 41 and 42 respectively, is announced at \$1,985. The models will have silver trimmings instead of nickel. Samples of the new semi-coupé, model K, are finished and production will begin immediately. The company produced 750 cars during the month of July.

### Reo Motor Car Raises Price

LANSING, July 31.—The Reo Motor Car Co. advances the price of its Model M six-cylinder car \$100.

New Price	Old Price
\$1,650	\$1,550

## Syracuse Dealers Get Time for Day of Play

### Forget Steel and Coal Troubles and Eat and Play Games at Suburban Summer Resort

SYRACUSE, Aug. 1.—Despite the fact that all the dealers here are busy with plans for present and future business, they found time yesterday to hold their annual outing. Sixty of them went to Three Rivers and played so fast from 11 a. m. that it seemed a long day had been spent by 5 o'clock.

In the execution of difficult and amusing games the dealers were close on the heels of Secretary Harry T. Gardner, who had the job of inventing the games.

As a starter there were several innings of argument with a playground ball and an indoor bat with 17 accessory and oil dealers on one side and 19 car dealers on the other. The accessory and oil men claim to have been ahead 7 to 2 at the time the dinner bell rang.

### The Trade Situation

Following the dinner the facts of the industrial situation were explained by Ray W. Sherman, editor of MOTOR WORLD, who advised the dealers not to pay too much attention to rumors and to disregard the numerous stories printed daily regarding the steel and other situations, suggesting that the whole matter is one of consistent and gradual development and not affected by minor phases to which undue publicity is often given.

Then the games began. When the generally dignified dealers turned themselves into human wheelbarrows they showed their usual speed, but none were so fast as B. S. Arnold and C. S. Gardner, and as pig-a-back performers 97-pound W. M. Williams had no trouble guiding F. A. Bouton to victory.

W. F. Williams, A. H. Poole and J. W. Lippitt excelled as leaping frogs, and M. M. Whorley and J. H. Stearns showed wonderful ability in going backwards. They are good salesmen. The champion throwers of an 8-pound iron bull were C. S. Countie and Charles Hastings.

### Some Funny Ones

One of the most amusing contests was one in which the dealers ran 50 yards, took off their shoes, drove three nails in a log, ran back to the start and put their shoes on again. There were classes for low and high shoes, and no handicaps were given for lace shoes with lost tips. Malcolm Dorian, E. Talmitch and J. Barzee won.

The funniest contest was one in which the contestants had to assemble a corn-cob pipe at the start, fill it with whang, light it, run 50 yards, eat a piece of pie, run 50 yards farther, thread a needle and run home without letting the pipe go out. Steady nerves and face capacity counted big. Had George F. Blake had a couple more inches of face he might have won. As it was he drew second, while first went to J. B. Hughes.

## Prominent Tradesmen Assume New Duties

### Resignations and Promotions Place Workers in New Places

Roy B. Simning, who recently resigned as assistant secretary of the Minneapolis Automobile Trade Association to join the Gasene Co., marketing a fuel, has resigned from the latter corporation.

Lewis Ford, nephew of Henry Ford, has taken a position with Freeman & Freeman, Little Rock, Ark. This firm recently contracted for 1000 Fordson tractors and was given the agency for Arkansas.

Donald F. Whittaker, advertising manager of the Acacon Motor Truck Co., Detroit, has also become assistant to H. A. Conlon, vice-president of the company, in charge of sales.

L. H. Morrill, who has had charge of the engineering department of the Northway Motors Co., Detroit, for the past 2 years, has resigned and accepted a position as assistant engineer in the engineering department of the Buda Co., Harvey, Ill.

J. R. Harrison has been appointed sales promotion manager of the Parrett Tractor Co., Chicago. He was formerly advertising manager of the Chalmers company, also associated with the National Cash Register Co. and the Burroughs Adding Machine Co. He will have charge of the advertising and sales promotion.

H. D. W. Mackaye, who has been connected with B. F. Everitt in the receivership settlement of the affairs of the Ross Automobile Co., Detroit, has entered the Government service in connection with munition production, and is located now at Jackson, Mich., as a civilian representative of the ordnance department.

Howard C. Caldwell, assistant advertising manager of the Haynes Automobile Co., Kokomo, Ind., has resigned to enter the Great Lakes Naval Training Station.

Leslie F. Smith, for two years the general manager of the Willlys-Overland branch at 526 Broad Street, Newark, N. J., resigned Aug. 1. During his managership he was one of the energetic workers in the New Jersey Automobile Trade Association. His resignation was made necessary through ill health. Smith has been succeeded by C. B. Derby, who has been assistant sales manager of the Willlys-Overland New York branch for several years.

Frank P. Obenberger, for the last five years general superintendent of the A. O. Smith Corp., Milwaukee, and superintendent of its forge works for four years before that time, resigned Aug. 1 to become associated with his father in the general management of the John Obenberger Forge Co., West Allis, Milwaukee, which is doubling its capacity for the manufacture of crankshafts, camshafts, and other automotive forgings.

L. K. Cooper, of the General Motors Co. staff, has been made sales-manager for the Chevrolet Motor Co. of St. Louis, vice Russell E. Gardner, Jr., in naval service.

William H. Eged, formerly general sales-manager for the Mitchell Motor Co., Philadelphia, has been appointed sales director for the Fulton Truck Co. of Philadelphia.

Frank L. Wurl, who has been intimately connected with many new developments in automotive ignition, starting and lighting, has been promoted sales engineer of the Remy Electric Co., located at Detroit.

## That Tractor Article

*We can't keep our promise to publish it this week. Because of delay in the mails the article failed to appear by press time. But watch for it*

## Next Week

### Acme Adds to Organization

CADILLAC, MICH., Aug. 2—The Acme Motor Truck Co. has made several additions to its sales force. G. M. Rockwell, recently connected with the sales department of the Republic Motor Truck Co., Alma, has been appointed district manager and a special representative of the District of Columbia. His territory will include Virginia, Maryland, Delaware and North Carolina. J. A. Bell, formerly connected with the White Co., Cleveland, has joined the organization as district manager, with the gulf states east of Texas as his territory. F. P. Walker will have charge of the western half of Iowa and the entire state of Nebraska.

### Reorganize Derf Spark Plug

NEW YORK, Aug. 3—The Derf Mfg. Co. has been generally reorganized and W. Earl Clayton appointed general manager. Fred Gerken was named president of the company. The output is at present 1000 plugs a day and plans are being laid for increasing this during the next two months.

## St. Louis Dealers Find Trade Conditions Good

### Two Companies Report Having Best Months in History—Supply Short of Demand

ST. LOUIS, Aug. 5—Two significant reports have been made on recent business by distributors here. The Mound City Buggy & Auto Co. reports July to have been the best month in history. Last winter when shipment of cars was practically impossible, President Schlecht of the Mound City company rented a warehouse in Fostoria, Ohio, and stored there all passenger cars turned out that could not be shipped to dealers for later delivery. Much of the supply distributed in July came from this warehouse. The Overland Automobile Co., according to President T. L. Hausmann, delivered 305 cars during June and had orders for more than 1100 machines.

### Parrett Tractor Men Gather

CHICAGO, Aug. 3—Directors, officers and representatives of the Parrett Tractor Co. of Chicago, just prior to the National Tractor Demonstration at Salina, Kansas, listened to a number of 5-minute talks on tractor matters. Following is the list of those who spoke and the topics which they covered: The Past, Present and Future of the Tractors, Dent Parrett; The Banker's Attitude Toward the Business Farmer, Henry A. Rudkin; Sea Tractors, Courtland D. Cramp; The Personal Equation in Business, Warren Barbour; The Attitude of the Automobile Parts Maker Toward the Tractor Industry, Major B. Hawxhurst; Quality as an Asset, Vincent Bendix; Financing Tractor Sales, Robert F. Wingard; Co-operation in Business, Albert E. Root; Motorizing the Farm, Leo M. Rumely; Eliminating Guesswork from Business, J. Robin Harrison.

## Automotive Securities Quotations

	Bid	Asked		Bid	Asked
*Ajax Rubber Co.....	61	63	*Maxwell Motor Co., Inc., 1st pfd.	54½	55½
*J. I. Case T. M. Co., pfd.....	80	86	*Maxwell Motor Co., Inc., 2d pfd.	21¼	22¼
Chalmers Motor Co., com.....	3½	5½	Miller Rubber Co., com.....	110½	112½
Chalmers Motor Co., pfd.....	30	40	Miller Rubber Co., pfd.....	97½	99½
*Chandler Motor Co.....	85	87	Packard Motor Car Co., com.....	—	125
Chevrolet Motor Co.....	133	135	Packard Motor Car Co., pfd.....	94	97
*Fisher Body Corp., com.....	37½	39½	Paige-Detroit Motor Co., com.	18	20
*Fisher Body Corp., pfd.....	89	90	Paige-Detroit Motor Co., pfd..	7	8½
Fisk Rubber Co., com.....	60	63	Peerless Truck & Motor Corp....	13	17
Fisk Rubber Co., 1st pfd.....	98	102	Portage Rubber Co., com.....	—	120
Fisk Rubber Co., 2nd pfd.....	78	83	Regal Motor Car Co., pfd.....	—	—
Firestone Tire & Rub. Co., com.	103½	105½	†Reo Motor Car Co.....	14½	15½
Firestone Tire & Rub. Co., pfd...	92	94	*Saxon Motor Car Corp., com.....	6½	8½
*General Motors Co., com.....	135½	136½	Springfield Body Corp., com.....	—	—
*General Motors Co., pfd.....	81	83	Springfield Body Corp., pfd.....	—	—
*B. F. Goodrich Co., com.....	45¾	46¾	Standard Motor Construction Co.	12	14
*B. F. Goodrich Co., pfd.....	99½	101	Standard Parts Co.....	—	—
Goodyear Tire & Rub. Co., com.	165	167	*Stewart-Warner Speed. Corp....	59½	60½
Goodyear Tire & Rub. Co., pfd...	97	97½	*Studebaker Corp., com.....	44	45
Grant Motor Car Corp., com.....	2¼	3¼	*Studebaker Corp., pfd.....	84	90
Grant Motor Car Corp., pfd.....	44	52	Swinehart Tire & Rubber Co.....	50	55
Hupp Motor Car Corp., com.....	3¼	4	United Motors Corp.....	31¼	32¼
Hupp Motor Car Corp., pfd.....	79	82	*U. S. Rubber Co., com.....	61	62
International Motor Co., com.....	25	—	*U. S. Rubber Co., pfd.....	104¼	105¾
International Motor Co., 1st pfd...	55	—	*White Motor Co.....	41¾	43¾
*Kelly-Springfield Tire Co., com.	50½	51¼	*Willlys-Overland Co., com.....	19½	20½
*Kelly-Springfield T. Co., 1st pfd.	79	87	*Willlys-Overland Co., pfd.....	81	83
*Lee Rubber & Tire Corp.....	21¾	22¼			
*Maxwell Motor Co., Inc., com...	27½	28½			

\*At close Aug. 1. †Listed N. Y. Stock Exchange. †Par value \$10.



# Motors the Making of Saskatchewan

## Cars and Tractors Permit Larger Farms and Help Solve Great Prairie Country's Problems

REGINA, SAS., Aug. 3—Just as the flivver and the more pretentious automobile have practically driven Dobbin off the roads of the Province of Saskatchewan, so the tractor, and especially the light tractor, bids fair to banish him from the work of the farm. The last five years have seen a veritable revolution in farming methods in Saskatchewan, and the outstanding feature of that revolution is the extensive use of the gasoline or kerosene tractor.

Twelve years ago there were only 22 automobiles in the entire Province of Saskatchewan, and the horse reigned supreme on the Saskatchewan roads.

Last year 33,505 motor licenses were issued in Saskatchewan—this year will probably see the 50,000 mark attained—and the horse has almost disappeared from the provincial roads. The big buyer of automobiles in Saskatchewan is the farmer.

Four or five years ago one could count on the fingers of two hands all the steam and gasoline tractors in the province belonging to individual farmers. To-day there are from 8000 to 10,000 individual owners of farm tractors in Saskatchewan. Last year saw extremely heavy buying of tractors by the farmers of the province, and there is no doubt whatever that the sales for 1918 will greatly surpass those of 1917.

There is reason for the revolution in farm methods. As a matter of fact, there are two or three compelling reasons, any one of which would be sufficient to bring it about.

First, consider the progressive character of the Saskatchewan farmer. He would not be here if he were not progressive. It's the man of energy and initiative who has the vision to see the possibilities of this great new country who comes here. The man without energy and initiative stays where he is born.

The farmer was quick to see that the motor car is not a luxury, but a necessity for the efficient handling of the business of farming in this country, where every hour and every minute of the rush season is of vital importance. Every time-saving and labor-saving device of practical value makes instant appeal to the progressive, up and coming, common-sense mind of the Saskatchewan grain grower.

In the years since the war the one-time flood of immigration has become a feeble stream. Consequently there has not been the same rapid increase in the numbers of individual farm holdings. In 1911 there were 96,372 individual farm holdings in Saskatchewan, and in 1916 the number had increased to 104,006. This increase is not spectacular, but it is not unsatisfactory under the circumstances.

But mark this. In the same period,

despite scarcity of farm labor, the average size of the individual farm grew from 297 acres to 353 acres. In the same period the area of improved land per farm increased from 123 acres to 188 acres. This despite the scarcity of labor; and in 1917, despite the increasing gravity of the labor situation, the tendency was still more marked. Saskatchewan farmers in 1918 are still increasing the area of their holdings and improving and increasing acreage.

Why are they doing it? And how are they doing it?

Why? Because, in spite of scarcity of labor, it must be done if we are to win the war. Because it is the farmer's all-important contribution toward the winning of that complete and speedy victory for which our souls are crying out.

How are they doing it? In the only way possible. When manual labor cannot be obtained machinery has to take its place. The tractor has been conscripted to make good the labor shortage.

### Not Happy Till He Gets One

The tractor is new to Saskatchewan, as elsewhere, but it has the same attraction as the famous brand of soap. No Saskatchewan farmer cultivating a half section or more will be happy until he gets one; and the average size of the Saskatchewan farm was 383 acres in 1916, and is still more to-day.

There has been a market in Saskatchewan this year for every light and medium tractor that the manufacturers could supply.

Consider what the tractor has made possible in this province. The machine in use in these parts is capable of turning over 40 to 50 acres per week. Compare this with the work of the horse-drawn plow. Consider the cost of feeding the horses on \$1 oats. Consider the absolute lack of farm labor and the imperative need of greater acreage in spite of all handicaps—and then wonder no longer that the tractor is rapidly replacing the horse in the heavy work of the Saskatchewan farms.

Regina, the capital of the Province of Saskatchewan, is recognized as the logical center for the biggest distribution of farm tractors for this province. All of the tractor firms doing business in the province are represented here. Many of them have branches nowhere else in the province. This is the center for the richest and best settled farming district in Saskatchewan. The best customers are close at hand. Those in other districts can easily be served from Regina, for this city has a strategic situation. A glance at the railway map is all that is necessary to establish the truth of that statement.

Next week's exhibition will see a magnificent display of the products of Sas-

katchewan farms; but the exhibits that will command most of the attention of thousands of farmers in attendance will be found in the tractor section. Saskatchewan farmers are tractor fans. There will be keen interest in the demonstration of what the rival makes can do.

Last winter several of the tractor companies held tractor schools in Regina, at which practical and theoretical instruction in the care and management of the tractor was given by qualified experts. Hundreds attended these classes. No one who saw the concentrated attention of the students of those classes could doubt that the western Canadian farmer is thoroughly converted to the tractor idea.

### Return Loads Bureau for Boston

PROVIDENCE, Aug. 3—Plans for a system of Return Loads Bureaus throughout New England were further advanced following a meeting held here on Thursday which was attended by representatives from all the states in this group. Stoughton Bell, representing the Boston Chamber of Commerce, reported that his organization had decided to inaugurate a bureau, following the report of a committee which investigated and favored the plan. He stated that \$4,000 has been pledged to carry the work along for 6 months, after which it may be self-supporting or nearly so from fees received from those utilizing the bureau. Massachusetts State officials are in hearty co-operation with the plan, and the committee on Public Safety has pledged \$1,500 toward the expenses of the bureau, and has placed at its disposal all the facts and figures gathered by Francis Hurtubis, Jr., chairman of its motor car and truck division, on vehicles and highways in the State following a six months' investigation. The Chamber of Commerce will put up \$1,000 and the motor truck dealers have pledged another \$1,000. The remaining \$500 has been raised from teaming and manufacturing interests.

The Boston Chamber of Commerce Bureau will be ready to begin its operations on or about Sept. 1 according to present plans.

### Pennsylvania Has 2250 Tractors

PHILADELPHIA, Aug. 3—Latest reports from the State Department of Agriculture show that there are now approximately 2250 tractors at work on the farms in Pennsylvania and that the number is increasing weekly, in some districts they having been doubled within a surprisingly short time, especially in the eastern counties. Plowing by tractor for wheat seeding has been started.

### Patent Rights for Bevel-Edge Granted

DETROIT, Aug. 5—Joseph H. Bourgon, body engineer of the Studebaker Corp., was granted patent rights covering the use of a bevel-edge around the top of an automobile. The bevel-edge is one of the most outstanding features of the new series 19 Studebaker.

## Cut Tire Output to Half of Year Ago

*Tire and Tube Makers Asked to Make in August and September Only Half What They Made in Same Months of 1917—Stocks May Care for the Dealers*

NEW YORK, Aug. 1.—The War Industries Board has requested the rubber industry to cut down the production of pneumatic tires and tubes during the months of August and September to 50 per cent of its production during the same months of 1917, and has placed itself on record as expecting that the use of tires will be restricted to war and essential business purposes. It has further let it be known that steps are now being taken to restrict the use of tires to such purposes, but no inkling of the steps to be taken has been permitted to become public.

The request to cut tire production during this two-month period really amounts to an order, and follows a recommendation made to the War Industries Board by the War Service Committee of the Rubber Association of America that such a step be taken. The War Service Committee also suggested that the use of tires be restricted to essential war and business purposes, and as a means to this end has proposed a Federal licensing system for cars and trucks so that every one may be checked up and the essential or non-essential character of its purposes definitely known.

More than 600 representatives of the rubber industry gathered at the Waldorf here to-day to go over with the War Service Committee of the Rubber Industry its recommendations for the importation, allocation and use of rubber, following the closing of the first quarter of the year during which Government restrictions on imports were to be effective.

Last April the Government ruled that during the three-month period commencing May 6 and ending July 31, only 25,000 tons of rubber might be imported, and that during the year, May to May, the total importation might be only 100,000 tons. The expiration of the period was the occasion for the gathering.

In consequence of recommendations made by the War Service Committee, the next period is to be of only two months' duration, the understanding being that in that period the rubber industry is to furnish the Government with additional data upon which to decide what quantities may be imported during the remainder of the year.

The War Trade Board has ruled that during the months of August and September rubber may be imported at the same rate as for the initial quarter of the year, i. e., at the rate of 100,000 tons a year. The rate of allocation by the Rubber Association of America, however, has been slightly altered. During these two months consumers will have rubber allocated on the following basis:

(a) Government requirements are to be supplied in full:

(b) The remainder to be allocated to consumers at the rate of three-eighths of their consumption during the same period last year. (In the first quarter the rate was one-quarter of seven-sixteenths.)

(c) New consumers will have rubber allocated in proportion to their mill or churn capacity.

Although the production of tires and tubes is to be cut down 50 per cent during August and September, it is not anticipated that this will cause any great hardship on dealers. The restriction applies only to manufacture, and inasmuch as many tire companies carry fairly extensive stocks on hand, it will be possible for them to supply current demand from these stocks.

The burden apparently will fall most heavily on small manufacturers, and particularly on those who have either started

since August, 1917, or who had very small production at that time. At the request of a majority of those present, the War Trade Board is to be asked for a ruling which would permit all manufacturers to base production during August and September on 50 per cent of their average production during the first 6 months of 1918, though small hope is held out that such a ruling will be obtained.

So that there may be closer co-operation between the War Industries Board and the rubber industry, a new section of the War Industries Board has been created. This will be known as the Textile and Rubber Division and is headed by John W. Scott, who will have supervision over textile matters. Henry T. Dunn, president of the Fisk Rubber Co., Chicopee Falls, is head of the rubber section.

In presenting its case before the War Industries Board, the War Service Committee reviewed at length the various uses to which rubber is put. It pointed out that the entire importation of rubber during 1917 only occupied 3.6 per cent of the total shipping tonnage entering Pacific ports, though it represented 28 per cent in the value of all imports. Now, due to improved packing methods, the same quantity of rubber can be carried in 2.7 per cent of the shipping tonnage.

## Hartford Has a Tractor Demonstration



HARTFORD, Aug. 3.—Hartford had its first tractor demonstration this afternoon at the Watkinson Farm School. Eight machines plowed and harrowed, each being allotted about a fifth of one acre. Fordson, Moline, Case, I. H. C., Chase, Heider, Cleveland and the Waterloo Boy were demonstrated.

The Fordson made its initial appearance at work in this vicinity and was closely watched. The interest expressed in all makes leads to the belief that the

old fogey notion that Hartford county farms are not suited to tractors has been overcome. At any rate tractors are coming into common use because farm labor is scarce. The tobacco men have led the procession in motor plowing and harrowing. The Hartford County League and Farm Bureau staged the event. Fully five hundred automobiles and trucks were at the demonstration. Accessories were displayed in tents on the farm school grounds. Some sales were made.

# The RETAIL NEWS

## MIDDLE WEST

**J. R. Combs & Co.**, Carson City, Mich., have just completed and are now occupying a new salesroom located on West Main Street. The company has been engaged in the automobile business here for several years and at present is local agent for the Saxon and Dodge, and operates a garage and service station. Fred A. Wright, one of the firm, will have charge of the salesroom, and J. R. Combs will have charge of the garage and repair work in the building which they have previously occupied.

**The Telotte-Bulck Sales Co.**, Detroit, has moved from 621 Woodward Avenue to 700 Woodward Avenue. The service station will occupy the rear of the building.

**The Automobile Electric Service Corp.**, 11-19 Selden Avenue, Detroit, has been appointed distributor of services and parts of the Delco, Remy and Klaxon equipments. The appointment was made by the United Motor Service, Inc. D. W. Burke, president and general manager of the Automobile Electric Service Corp., was formerly manager of the automobile service department of the Westinghouse Electric Mfg. Co., Pittsburgh.

**The Federal Tire & Supply Co.**, 345-347 Eleventh Avenue, Milwaukee, Wis., which recently was purchased by the Grede interests, has incorporated its business with an authorized capital stock of \$10,000. The incorporators are Arthur L. Grede, Herbert A. Ruhnke and C. M. Dering.

**The Myrman-Stone Auto Co.**, Chippewa Falls, Wis., has disposed of its garage, repairshop and business to Edward Sageng, for five years mechanical superintendent of the Barker Auto Co. Helmer Stone and John Myrman, former owners, are entering the military service.

**The Up-to-Date Auto & Supply Co.**, Sauk City, Wis., has been purchased by Nicholas Schneider, Honey Creek, who is now in charge. Edward and David Gray, former owners, have been called to the colors.

**The Gillespie-Curtin Co.**, Detroit, a local tire house that recently leased the storeroom at 1010 Jefferson Avenue, adjoining the one the company has occupied for the past 2 years, has completely remodeled and redecored the plant, which now gives double the floor space.

### New Garages

Union Automobile Co. (105 x 125),  
Eau Claire, Wis.

### New Truck Dealers

Creek Motor Sales Co. (Collier)...Milwaukee  
Earl Motor Truck Co (Acason).....Chicago

## SOUTHWEST

**Tom Sallee**, Arkansas City, Kan., has opened an automobile business at 300 North Summit Street. He is a Paige dealer.

**The Battery Repair Co.**, Coffeyville, Kan., H. W. McGovney, proprietor, has moved to 817 Union Street.

**The McClaskey Bros.**, Girard, Kan., have leased the Girard Garage from R. C. Lawler.

**C. A. Henry**, Langdon, Kan., has opened an automobile business in connection with his hardware store.

**Fred Kuhne**, Larned, Kan., has bought out his partner, L. M. Price, in the firm of Kuhne & Price, automobile supplies.

**Chambers & Stephenson**, Butler, Mo., have opened an automobile business.

**Herman Riedel**, Hannibal, Mo., has leased the garage of E. C. Long, 910 Broadway.

**The Southwest Nash Motor Co.**, Kansas City, Mo., has opened its headquarters in Kansas City, although it will not solicit business in that territory. Its branches are in St. Louis, Denver and Oklahoma City, Okla.

**C. P. Hobgood**, Gurdon, Ark., Dort and Chandler dealer, has opened new salesrooms.

**Herbert's Garage**, Columbus, Tex., has moved into its new building.

**W. E. French**, Lexington, Okla., has bought the B. B. Garage.

**The Central Garage**, Okemah, Okla., has moved into its new building.

**Lloyd Kinsey**, Tahlequah, Okla., has bought the Strauss Bros. Garage.

**W. A. Wilson**, Weleetka, Okla., has taken over the garage and service department of the Weleetka Garage & Transfer Co.

**J. L. Morgan and Ford L. Marks**, Waurika, Okla., have bought the stock and automobile supplies and accessories of J. S. Mize.

### New Garages

The Motor Inn Co. (Bedner & Lewis),  
Chickasha, Okla.  
J. W. Walker.....Chickasha, Okla.  
R. R. Thorp.....Garber, Okla.  
W. F. Seifried.....Purcell, Okla.  
Ideal Garage & Motor Co., Tahlequah, Okla.  
John Miller .....Atchison, Kan.  
R. M. Gilman.....Baxter Sps., Kan.  
More Mileage Co.....Hutchinson, Kan.  
Elmer Patterson .....Junction City, Kan.  
A. E. Weikert.....Leavenworth, Kan.  
Hugh McGuire .....Pittsburg, Kan.  
Edwin Tiede .....Billings, Mo.  
Ward-Coppage Mercantile Co.,  
Carthersville, Mo.  
J. M. Barson.....Joplin, Mo.  
R. B. Wayland.....New Franklin, Mo.  
Eldon Aker .....Trimble, Mo.  
George Heckman .....Warrenton, Mo.

## PACIFIC COAST

**Cliff Lisher** has purchased the vulcanizing plant of the Double Tread Tire Co. at 1729 Broadway, Oakland.

**R. Lundgren** has become sole owner of the Atlas Garage, 1562 Franklin Street, Oakland.

**Nelson N. Scotchler Co.**, Ford dealer, has moved to its new fireproof building, 80 x 120, at 2355 Shattuck Avenue, Berkeley.

**Berger Bros.** have moved their tire and vulcanizing shop from Twelfth Street to 2201 Broadway, Oakland.

**The Bearings Service Co.** has opened a branch at 2105 Broadway, Oakland, with L. H. Rueckert as manager.

**Arbutnot's Tire Shop** has moved to 2151 Broadway, Oakland.

**Denny & Krause** have opened a tire rebuilding and vulcanizing plant at 1015 Larkin Street, San Francisco.

**The Hanni Auto Repair Co.** has moved from Van Ness Avenue to a new building at 1630 Pine Street, San Francisco, and will specialize on Buick repair work.

**Sa Kuji Matamura** has leased the premises 661 Densadero Street, San Francisco, and conducts business as the Park Automobile Repair Co.

**Paul Hoots**, 2285 Broadway, Oakland, has installed a plant to manufacture the Minute Vulcanizing Patch.

**Edward St. Supery**, formerly of St. Helena, has erected a garage, 50 x 275, at 1530 Fell Street, San Francisco, extending through the block from Fell to Hayes Street, and will operate as the St. Supery Garage.

**The American Automobile Accessory Co.**, with the firm name of A. A. A. Co., has opened an accessory and tire store at 917 Van Ness Avenue, San Francisco.

**R. C. Hooper, W. E. Hooper and B. F. Lyle** have established the Auto Tire Shop at 400 Golden Gate Avenue, San Francisco.

**H. J. Reandeau** has opened the Camp Garage, opposite Camp Fremont, Menlo Park, Cal.

**The Stockton Cut Rate Tire Shop**, H. H. Dyson, proprietor, has doubled its floor space by leasing adjoining premises, 435 East Market Street, Stockton, Cal.

**Breaw & Hamm**, Chevrolet dealers at Stockton, Cal., have erected a new building, 50 x 100, at 338 North Eldorado Street.

**J. H. Southwell** has acquired a half interest in the San Joaquin Auto Co., Stockton, Cal. The firm name has been changed to Southwell-Hunter Auto Co.

**Charles S. Harper, Inc.**, Willard service station, Seattle, has opened a branch service station in Bremerton, Wash.

**Sunset Electric Co.**, Seattle, automobile electrician, has been appointed official service station for the U. S. L. storage batteries. This concern has also secured the agency for the Simms-Huff magnetos and generators.

**Wiles & Foy, Inc.**, Seattle, composed of Fred S. Wiles and G. B. Foy, will open headquarters at 700 East Pike Street. The company will handle Republic tires in central and western Washington.

**Walters-Crocker Rubber Co.**, Olympia, Wash., will open a tire repairshop at 113 West Fifth Street. Retreading work will be handled and Fiske tires and accessories distributed.

**Vick Bros.**, Salem, Ore., have been given the agency for the Fordson tractor for the State of Oregon.

**Christ E. Dow**, manager of the Dodge Bros. agency, Everett, Wash., has sold his agency to C. H. Gillespie, former head of the sales department.

**Spokane Auto Co.**, Spokane, has taken the agency for the Plowman tractor.

**Van Metre Howard Battery Co.**, Seattle, will move to 48 North Broadway, where the firm will have four times its present floor space.

**Shields-Livengood Co.**, Seattle, has moved to its new quarters at Eleventh Avenue and East Pike Street, where a large building has been remodeled.

**N. F. Rea**, Tacoma, Wash., district distributor for Gramm trucks, has leased the new two-story garage building recently completed at Twenty-fifth Street and Jefferson Avenue.

**A. T. Mapson**, Seattle, Wash., has purchased the Tyre Shop, 617 East Pike Street, from H. B. Wilbur, who has joined the service with the Y. M. C. A.

### New Garages

Gorst & King Auto Co. (100 x 100, two stories, concrete and brick, cost \$25,000),  
North Bend, Ore.  
Burns Garage Co. (50 x 150, two stores),  
Burns, Ore.  
H. B. Quick Auto Co. (40 x 54),  
Chehalis, Wash.

### New Truck Dealers

R. H. Douglas (Ralston).....Oakland  
Pacific Motors, Inc. (Menominee).....Seattle

## NORTHWEST

John Thornton, Nevada, Iowa, has purchased the Service Garage from Pierce & Bamford.

Joe Mahoney, Estherville, Iowa, has sold his garage to Mr. Moore of Armstrong.

Elmer and Arthur Johnson, Sioux Rapids, Iowa, have purchased a garage at Albert City.

A. G. Leonard, Charles City, Iowa, has bought the T. C. Reynolds vulcanizing plant at Adel, Iowa.

Carlton Lee, Mason City, Iowa, has leased the Sikkema Garage, Hampton, Iowa.

Shifflett & Hollenbaugh, Manson, Iowa, have closed their garage, and both men will go into the military service.

Ernest A. Hager has opened a tire repair-shop at 416 Sixth Street, Fairbury, Neb.

The Cut Rate Tire Co., I. E. Stine, president, has opened a tire store at 240 South Main Street, Lincoln, Neb.

The Batry Vim Co., Lincoln, Neb., has opened a branch store at Norfolk, Neb.

The Gates Half Sole Co., Denver, has opened a branch office at Lincoln, Neb.

The Gates-Mayer Tire Co. has opened a new tire shop at 1200 P Street, Lincoln, Neb.

The Bucketstaff Auto Co. is moving into new quarters at 222 North Twelfth Street, Lincoln, Neb.

Shaner & Kessler have opened a repairshop at 241 South Eleventh Street, Lincoln, Neb.

The Oldsmobile Co. of Nebraska is moving its salesroom and service department from Lincoln to Omaha.

The Crete Buick Co., Crete, Neb., has been sold to L. Doring, who will do business under the same style.

Fred Ventrees has leased the repairshop of the Weiler Auto Co. at Lincoln, Neb.

## New Garages

Stuart & Hall.....Marshalltown, Iowa  
Standard Oil Co. (Service Station),

Cherokee, Iowa

Fitz Brothers .....Manson, Iowa

Frank Rose .....Corning, Iowa

Schweitzer Bros. (50 x 80).....Milford, Neb.

Nebraska Federal Truck Co....Lincoln, Neb.

## Enlisting the Dealer in the Farm Electric Light Campaign

(Continued from page 13)

Western Electric Co., Inc., to know how the system works. There is no doubt in the minds of the Western Electric that an increasingly large number of garagemen will be selling power and light through this year and next; and while winter is logically the best time for actual selling of light and power plants to farmers, for the reason that he has no harvest to get in, no building to do and because the long nights are then at hand, still summer is a mighty good time for the prospective dealer to think about the proposition in earnest, examine its points and be ready to talk and demonstrate intelligently should he decide finally to become either a dealer or sub-dealer.

And right here it should be said that the Western Electric admits that one reason why the garageman is sought to do the work is because the company desires high grade dealers, men who will wish to be occupied in some way all the year. The more ambitious the man is to earn, the more likely that he will become a first rate dealer or sub-dealer. So, while winter is the best time for actually selling farm lighting plants, the company has a milking machine proposition which can be used by the dealer in the summer time, both on its own account and as an "entering wedge" for the power and light plant proposition, and vice versa.

Every farmer who has an automobile is considered—and past performances of dealers have shown with good reason—as a first-rate prospect for both a power and light plant and a milking machine, for he not only has the money but also is showing himself to be a man of modern ideas, willing to lift, so far as possible, his family and himself away from drudgery, and thus have time for something besides mere bread-winning.

The dealers themselves arrange for installing light and power plants in farm homes. They may either do it personally, if they are able, or through an electrical contractor. Most garagemen understand wiring and installing sufficiently to be able to put up plants successfully without recourse to the contractor unless business is so brisk that they need assistance.

Sub-dealers may take up the work on a percentage basis or for a flat sum.

Every prospective dealer or sub-dealer should make it his business to learn as quickly as possible after undertaking the work, just where the best farms in his district are situated and who among the farmers are the likeliest prospects, though this part of the proposition is one for which it is necessary to keep continuously on the alert. *A fifty-acre farm now is being taken as the minimum basis in Pennsylvania as a prospect.*

It is interesting to know that 99 per cent of the farmers who buy a light and power plant require a gas engine of one and a half to two horsepower to carry it on successfully, and these engines the company and its agents also sell. Early in September, however, the company will place on the market a sixth line of power and light outfits, or what will be known as the direct-connected outfit, of low-voltage type, and a capacity of 1½ kw.

This outfit will consist of an engine, generator and regulator panel mounted together on one base, and a separate storage battery. The engine operates on either gasoline or kerosene, is throttle-governed and air-cooled, developing somewhat over 3 hp. and operating at 1000 r.p.m. It is, in fact, just such a

type of engine as the motor car salesman and garage owner are most thoroughly familiar with.

The farmer's wife and daughter are objectives in a selling drive of this nature, for the Western Electric realizes that it is to please the women and lighten their labor that the farmer nowadays is putting in power and light plants and the woman of the farm household is the dealer's best aid in a selling proposition. If SHE is interested the farmer will be in nine cases out of ten, unless he is of that hard-fisted, old-fashioned type that spends more on and cares apparently more for his stock than his women folks. But that type has nearly died out, except in isolated communities.

Now and then an enterprising motor car salesman-dealer or garageman will rig up a practical demonstrating car himself and thus help sales along. It is about the best possible argument, for he can always go to his prospect and not wait for prospects to come to his salesrooms or garage. This kind of "hitting the trail" already is reported to have been found profitable. One dealer who installed in a Reo car a Western Electric automatic regulator outfit, through being able to get about quickly and see a large number of prospects, now has eight sub-dealers established.

## Books Received

A practical handbook for sheet metal workers has been written by L. Broemel, who is connected with the Peck, Stow & Wilcox Co. of Southington, Conn., in collaboration with J. S. Dougherty, instructor in sheet metal work in the School of Applied Industries, Carnegie Institute of Technology, Pittsburgh, who has contributed a course of instruction, adapting the book for training schools.

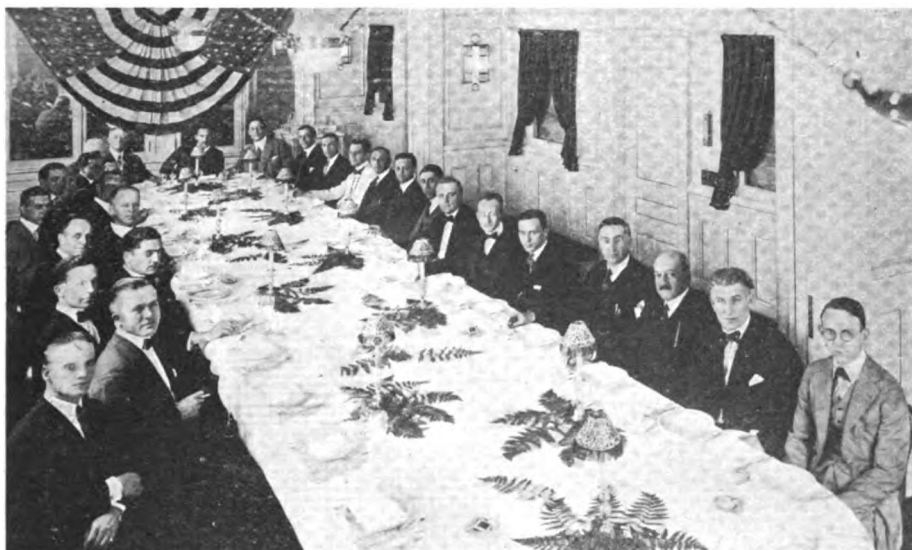
As machinery enters largely into modern sheet metal work, considerable space is devoted in the first part of the book to descriptions and illustrations of such machinery. The classes of work for which each machine is best suited and the method of handling the machine are brought out.

Next follows the course in elementary and advanced sheet metal work and pattern drafting by Dougherty.

There are a number of subjects dealt with in the book that are more or less outside the scope of its title, such as oxy-acetylene welding, electric welding, hand forging and welding, pipe bending, etc., but as the information given is of a practical nature and covers subjects related to sheet metal work it will be appreciated by the reader.

The book should be helpful to the repairman, as a good many repairs, chiefly radiator repairs, are of the class of work dealt with. There are 552 pages of text and illustrations, 4½ x 7 in., and the book is bound in flexible covers.





### Getting Ready for the Coming Truck Business

**A**T the recent meeting in New York of the sales organization of the Hurlburt Motor Truck Co. the organization learned that the company has been depending as little as possible on the railroads, hauling its own raw materials as much as possible and delivering trucks over the road. Among those who talked of the truck future were: President William B. Hurlburt; Sales Manager R. M. Walker; P. C. Chrysler, Philadelphia branch; N. A. Manship, Newark branch; Frank Jepson, assistant sales manager.

### Is It ProSteering?

BOSTON, Aug. 3—"Cord tires will be selling for \$100 each very soon, and I am going to hold on to the ones I have in stock and make a cleanup, for I know there won't be any more to be had," said one of the most prominent accessory dealers in Boston this week when asked why he told a customer he was all out of cords while some were noticed in his private office.

"A short time ago I began to notice that some of the calls for cords came to me from other dealers, and I reasoned it out that if they were selling quickly, coupled with the demand I had from customers, it might be well to slow up supplying every one. So I shut down. Since then the demand has increased, and I can sell every cord tire in my place in a few days at a good profit.

"But, not knowing how things are going to break, I am going to hang on to them and make them carry the loss on other lines to balance up. Of course I am not advertising this fact to every one, but just biding my time. A good example of the demand is this advertisement in one of our newspapers that has been running some days at a cost of at least \$2, which together with the liberal reward to be paid and the cost of getting the tire back if it were lost on that long stretch of 100 miles, shows how valuable the owner regards it:

#### "LOST—AUTOTIRE

"BETWEEN Boston and York, Me., a Goodrich 34 x 4½ shoe, tube and rim; finder will be liberally rewarded. Write or phone to MR. CURRY, 369 Congress St., Boston; phone Main 8060."

"There is also a scarcity of rims here,

and it is going to be harder to get them, so the few of us who got in a stock, though we are practically sold out now, have made a good profit. Motorists are buying the stuff they need if they can get it."

### Watch For Him!

• BOSTON, Aug. 3—Automobile dealers and buyers in New England have been instructed to watch out for a man who styles himself Henry W. Reynolds, and who, it is alleged, has been swindling dealers, buyers and newspapers out of money. He lands in a large city and after looking over the territory he plans his operations by getting supposed op-

tions on cars and then advertises in the newspapers along these lines:

OWN A CAR!  
WHY NOT?  
WE BUY IT FOR YOU.

Select any new automobile you want, make us a small cash payment. We deliver the car to you, insured against theft, fire and accident. (No extra charge for insurance.) You use the car while paying for it. There will be no publicity connected with the transaction.

Automobile Security Co., or  
Automobile Finance Co.

He operated at Pittsburgh last summer, then went west to Kansas City in the fall and this year went south to Atlanta, and he may be planning to use New England, as it was said he headed for that place. But he is liable to turn up anywhere. He is said to get deposits from customers and by holding them off on the plea of delayed freight deliveries until he gets enough money or it becomes too hot he decamps, leaving unpaid bills for advertising, office rent and everything possible. He is described as between 40 and 45 years; height, 6 ft.; weight, 180 lb.; hair slightly gray around the temples, bald near forehead; nose, large and red; diamond ring right hand; conversation low and without accentuation; business experience, advertising.

### Joliet Branch for Cleveland

JOLIET, ILL., Aug. 3—The Joliet Oil Tractor Co. has opened a distributing office for Ohio at 1754 East Seventeenth Street, Cleveland, which will do business under the style Bates-Steel-Mule Co. of Ohio. This office has been established to handle the new Model B Bates steel mule exclusively, and will give factory service to all Ohio dealers and customers. A branch will be opened at Columbus to assist in distribution. It is the intention of the parent company to place a limited number of dealers in Ohio this year. Probably not more than twenty dealers will be appointed in 1918, as this number will take the entire quota for Ohio this season. Approximately one-half the quota has already been assigned.

## Coming Events

*Columbia County, N. Y.	Tractor demonstrations, New York	Aug. 15
	State Food Commission; Calvin J. Huson, Director.	
Indianapolis, Ind.	Automotive Show, Indiana State Fair, Indianapolis Automobile Trade Association; John Orman, Manager.	Sept. 2-7
Chicago, Ill.	Automotive and Accessories War Exposition, Municipal Pier. H. V. Buelow, Managing Director.	Sept. 14-21
Canada	Tractor demonstrations	Sept. 17-18-19
Dallas, Tex.	Seventh Annual Automobile Show	Oct. 14-17
	Texas State Fair.	
Dallas, Tex.	Seventh Annual Texas Automobile Show	Oct. 14-27
	Texas State Fair.	
Chicago, Ill.	Convention and Automotive Equipment Exhibit	Oct. 28-Nov. 2
	National Association of Automobile Accessory Jobbers.	

\*Date and place not definitely fixed.

# Passenger Cars

# MOTOR WORLD GUIDE

# Passenger Cars

This table appears in the first issue every month. It is corrected every month and brought up to date.

MAKE AND MODEL	Price	No. of Cylinders	Bore and Stroke, Inches	S.A.E. H.P.	Piston Displacement	High Gear Ratio	Make of Engine	Cylinder Shape	Camshaft Drive	Water Circulation	LUBRICATION		ELECTRIC SYSTEM		IGNITION		CARBURETION		TRANSMISSION				RUNNING GEAR				BEARINGS						
											System	Type of Pump	Make	Voltage	Make	Plug	Make of Carburetor	Fuel Feed	Clutch Type	Location	Forward Speeds	Make	Final Drive	Car Drives Through	Rear Axle Type	Make of Rear Axle	Torque Taken By	Wheelbase	Tires	Rims	Wheels	Rear Springs	Make of Speedometer
Abbott.....	6-62	1195	31x51	29.4	303.1	4.30-1	Cont.	L	H	P	P	Sp-Pr	P	Remy	6	Remy	Stnbg.	V	D	Unit M.	3	Muncie	Sp. B.	Sp. B.	SS	34x4	SS	Wd.	Stewart	3	3 B.	RR	R.
Allen.....	41	1195	31x51	22.5	220.0	4.25-1	Own.	L	H	T	Cir-Sp	P	A-Lite-2	6	Conn.	Stnbg.	V	P	Unit M.	3	Own	Sp. B.	Sp. B.	SS	32x3	SS	Wd.	Stewart	2	3 B.	RR	R.	
American.....	B	1695	31x45	23.4	230.1	4.42-1	Rutnbr.	L	H	P	Sp-Pr	P	West-2	6	A-Kent	Zenith.	V	P	Unit M.	3	G-Lees	Sp. B.	Sp. B.	SS	32x4	SS	Wd.	Stewart	3	3 B.	RR	R.	
Anderson.....	20	1465	31x44	25.3	224.0	4.58-1	Cont.	L	H	P	Sp-Pr	P	West-2	6	Conn.	Zenith.	V	D	Unit M.	3	Detroit	Sp. B.	Sp. B.	SS	32x4	SS	Wd.	Stewart	3	3 B.	RR	R.	
Anderson.....	400-F	1925	31x51	29.4	303.1	4.32-1	Cont.	L	H	T	Sp-Pr	P	Bijur-2	6	Remy	Johnson.	V	D	Unit M.	3	G-Lees	Sp. B.	Sp. B.	SS	32x4	SS	Wd.	Stewart	3	3 B.	RR	R.	
Apperson.....	8-18	2800	31x51	33.8	331.8	4.25-1	Own.	L	H	T	Sp-Pr	P		6	Remy	Johnson.	V	D	Unit M.	3	G-Lees	Sp. B.	Sp. B.	SS	32x4	SS	Wd.	Stewart	3	3 B.	RR	R.	
Apperson.....	3 cyl Anniversary	3500	31x51	25.3	224.0	4.42-1	Cont.	L	H	P	Sp-Pr	P	Remy-2	6	Remy	Rayfield	V	P	Unit M.	3	G-Lees	Sp. B.	Sp. B.	SS	32x4	SS	Wd.	Stewart	3	3 B.	RR	R.	
Auburn.....	6-39	1445	31x44	29.4	303.1	4.08-1	Cont.	L	H	P	Sp-Pr	P	Delco-2	6	Delco	Rayfield	V	P	Unit M.	3	G-Lees	Sp. B.	Sp. B.	SS	32x4	SS	Wd.	Stewart	3	3 B.	RR	R.	
Auburn.....	6-44	1750	31x51	39.7	389.5	3.75-1	Widly.	L	H	P	P	P	Delco-2	6	Delco	Stnbg.	V	D	Unit M.	3	Muncie	Sp. B.	Sp. B.	SS	34x4	SS	Wd.	Stewart	3	3 B.	RR	R.	
Austin.....	6-44	1750	31x51	39.7	389.5	3.75-1	Widly.	L	H	P	P	P	Delco-2	6	Delco	Stnbg.	V	D	Unit M.	3	Muncie	Sp. B.	Sp. B.	SS	34x4	SS	Wd.	Stewart	3	3 B.	RR	R.	
Bell.....	18	995	31x44	22.5	187.7	4.40-1	G.B.&S.	L	H	T	Cir-Sp	P	Dynato-2	6	A-Kent	Zenith.	V	D	Unit M.	3	Covert	Bevl.	Bevl.	SS	31x4	SS	Wd.	Stewart	3	3 B.	RR	R.	
Biddle.....	H	2650	31x51	22.5	226.0	4.40-1	Buda	L	H	T	Cir-Sp	P	G.West-2	6	Elsmn.	Zenith.	V	P	Unit M.	4	Covert	Sp. B.	Sp. B.	SS	31x4	SS	Wd.	Stewart	3	3 B.	RR	R.	
Bour-Davis.....	18A	1680	31x45	22.5	226.0	4.40-1	Cont.	L	H	T	Cir-Sp	P	G.West-2	6	West.	Miller.	V	P	Unit M.	3	Detroit	Sp. B.	Sp. B.	SS	32x4	SS	Wd.	Stewart	3	3 B.	RR	R.	
Bour-Davis.....	18B	1785	31x45	29.4	303.0	4.07-1	Cont.	L	H	P	Cir-Sp	P	G.West-2	6	West.	Zenith.	V	P	Unit M.	3	Detroit	Sp. B.	Sp. B.	SS	32x4	SS	Wd.	Stewart	3	3 B.	RR	R.	
Brewster.....	Chassis	5500	4x51	25.6	276.0	4.35-1	Own.	K	C	P	P	P	G.U.S.L.	12	Bosch.	Zenith.	V	C	Unit X.	3	Own	Bevl.	Bevl.	SS	32x4	SS	Wd.	Stewart	2	3 B.	RR	R.	
Brison.....	B-4-24	825	31x45	16.3	163.0	4.23-1	Own.	L	H	T	Cir-Sp	P	A-Lite-1	6	Conn.	Buick.	V	C	Unit X.	3	Own	Bevl.	Bevl.	SS	32x4	SS	Wd.	Stewart	2	3 B.	RR	R.	
Buck.....	E-4-34	795	31x44	18.2	170.0	4.08-1	Own.	L	H	P	Cir-Sp	P	Delco-1	6	Delco	Marvel.	V	C	Unit X.	3	Own	Bevl.	Bevl.	SS	32x4	SS	Wd.	Stewart	2	3 B.	RR	R.	
Buck.....	E-4-45	1265	31x44	27.3	242.0	4.08-1	Own.	L	H	P	Cir-Sp	P	Delco	6	Delco	Marvel.	V	C	Unit X.	3	Own	Bevl.	Bevl.	SS	32x4	SS	Wd.	Stewart	2	3 B.	RR	R.	
Buck.....	E-6-44	1495	31x44	27.3	242.0	4.61-1	Own.	L	H	P	Cir-Sp	P	Delco	6	Delco	Marvel.	V	D	Unit M.	3	Own	Sp. B.	Sp. B.	SS	34x4	SS	Wd.	Stewart	4	3 B.	RR	R.	
Cadillac.....	57	3220	31x51	31.2	314.0	4.43-1	Own.	L	C	P	P	P	Delco-1	6	Delco	Own	V	D	Unit M.	3	Own	Sp. B.	Sp. B.	SS	35x5	SS	Wd.	Stewart	3	3 B.	RR	R.	
Case.....	U	1875	31x51	29.4	303.0	4.45-1	Own.	L	H	C	P	P	West-2	6	Remy	Rayfield	V	P	Unit M.	3	G-Lees	Sp. B.	Sp. B.	SS	35x4	SS	Wd.	Stewart	3	3 B.	RR	R.	
Chalmers.....	6-30	1615	31x45	25.3	224.0	4.75-1	Own.	L	H	T	Sp-Pr	P	West-2	6	Remy	Stnbg.	V	P	Unit M.	3	Own	Sp. B.	Sp. B.	SS	35x4	SS	Wd.	Stewart	3	3 B.	RR	R.	
Chandler.....	490	1795	31x45	29.4	289.0	4.40-1	Own.	L	C	P	P	P	West-2	6	Bosch.	Rayfield	V	P	Unit M.	3	Own	Sp. B.	Sp. B.	SS	34x4	SS	Wd.	Stewart	3	3 B.	RR	R.	
Cherrolet.....	FA	735	31x44	21.7	171.0	3.65-1	Own.	L	H	P	Sp-Pr	P	A-Lite-2	6	Remy	Zenith.	V	C	Unit M.	3	Own	Sp. B.	Sp. B.	SS	32x3	SS	Wd.	Stewart	3	3 B.	RR	R.	
Cherrolet.....	D4 & D5	1585	31x45	21.7	171.0	4.25-1	Own.	L	H	P	Sp-Pr	P	A-Lite-2	6	Remy	Zenith.	V	C	Unit M.	3	Own	Sp. B.	Sp. B.	SS	32x3	SS	Wd.	Stewart	3	3 B.	RR	R.	
Cherrolet.....	C	870	2595	31x44	39.2	346.4	4.45-1	North.	L	H	P	P	Delco-2	6	Delco	Zenith.	V	C	Unit M.	3	North.	Bevl.	Bevl.	SS	34x4	SS	Wd.	Stewart	3	3 B.	RR	R.	
Cole.....	Columbia	1450	31x44	25.3	224.0	4.75-1	Cont.	L	H	P	P	P	Delco-2	6	Delco	Stnbg.	V	C	Unit M.	3	North.	Bevl.	Bevl.	SS	34x4	SS	Wd.	Stewart	3	3 B.	RR	R.	
Comet.....	C-51	1685	31x51	29.4	303.1	4.45-1	Cont.	L	H	P	Sp-Pr	P	Dynato-2	6	Delco	Rayfield	V	P	Unit M.	3	Warner	Sp. B.	Sp. B.	SS	32x4	SS	Opt.	Stewart	3	3 B.	RR	R.	
Commonwealth.....	4-40	1095	31x45	19.6	192.0	4.00-1	Lyong.	L	H	T	Cir-Sp	P	Dynato-2	6	Bosch.	Rayfield	V	P	Unit M.	3	Warner	Sp. B.	Sp. B.	SS	32x4	SS	Opt.	Stewart	3	3 B.	RR	R.	
Crawford.....	6-40	2500	31x51	19.6	192.0	4.08-1	Cont.	L	H	T	Cir-Sp	P	West-2	6	A-Kent	Cartier.	V	P	Unit M.	3	Mech.	Sp. B.	Sp. B.	SS	32x4	SS	Opt.	Stewart	3	3 B.	RR	R.	
Crawford.....	CE-35	995	31x45	19.6	192.0	4.25-1	Own.	L	H	P	Cir-Sp	P	Dynato-2	6	Conn.	Stnbg.	V	P	Unit M.	3	Covert	Bevl.	Bevl.	SS	35x5	SS	Opt.	Stewart	3	3 B.	RR	R.	
Crawford.....	CE-35	995	31x45	19.6	192.0	4.25-1	Own.	L	H	P	Cir-Sp	P	Dynato-2	6	Delco	Stnbg.	V	D	Unit M.	3	B-Lipe	Sp. B.	Sp. B.	SS	35x5	SS	Opt.	Stewart	3	3 B.	RR	R.	
Cunningham.....	V	4250	31x51	45.0	442.0	3.50-1	Own.	L	H	T	P	P	West-2	6	Delco	Stnbg.	V	D	Unit M.	3	B-Lipe	Sp. B.	Sp. B.	SS	35x5	SS	Opt.	Stewart	3	3 B.	RR	R.	
Danville.....	B	3500	31x51	33.8	331.8	4.45-1	Her-Sp.	L	H	P	P	P	West-2	6	West.	Zenith.	V	D	Unit M.	3	B-Lipe	Sp. B.	Sp. B.	SS	34x4	SS	Wd.	Stewart	3	3 B.	RR	R.	
Davis.....	H	1685	31x44	25.3	224.0	4.58-1	Cont.	L	H	P	Sp-Pr	P	Delco-2	6	Delco	Stnbg.	V	C	Unit M.	3	Warner	Sp. B.	Sp. B.	SS	34x4	SS	Wd.	Stewart	3	3 B.	RR	R.	
Davis.....	J & M	2050	31x44	25.3	224.0	4.42-1	Cont.	L	H	P	Sp-Pr	P	Delco-2	6	Delco	Stnbg.	V	C	Unit M.	3	Warner	Sp. B.	Sp. B.	SS	34x4	SS	Wd.	Stewart	3	3 B.	RR	R.	
Day.....	LS-35	1095	31x45	16.9	165.9	4.75-1	Lyong.	L	H	T	Cir-Sp	P	Dynato-2	6	Conn.	Cartier.	V	D	Unit M.	3	G-Lees	Sp. B.	Sp. B.	SS	32x3	SS	Wd.	Stewart	3	3 B.	RR	R.	
Dodge Brothers.....	D	985	31x44	24.0	212.3	4.17-1	Own.	L	H	P	Sp-Pr	P	Wagne-2	12	Doble	Cartier.	V	D	Unit M.	3	S.	Sp. B.	Sp. B.	SS	32x3	SS	Wd.	Stewart	3	3 B.	RR	R.	
Dodge Brothers.....	D	985	31x44	24.0	212.3	4.17-1	Own.	L	H	P	Sp-Pr	P	N-East-1	12	Own	Stewart.	V	D	Unit M.	3	Own	Sp. B.	Sp. B.	SS	32x3	SS	Opt.	Stewart	3	3 B.	RR	R.	
Dodge Brothers.....	D	985	31x44	24.0	212.3	4.17-1	Own.	L	H	P	Sp-Pr	P	N-East-1	12	Own	Stewart.	V	D	Unit M.	3	Own	Sp. B.	Sp. B.	SS	32x3	SS	Opt.	Stewart	3	3 B.	RR	R.	
Dodge Brothers.....	D	985	31x44	24.0	212.3	4.17-1	Own.	L	H	P	Sp-Pr	P	N-East-1	12	Own	Stewart.	V	D	Unit M.	3	Own	Sp. B.	Sp. B.	SS	32x3	SS	Opt.	Stewart	3	3 B.	RR	R.	
Dodge Brothers.....	D	985	31x44	24.0	212.3	4.17-1	Own.	L	H	P	Sp-Pr	P	N-East-1	12	Own	Stewart.	V	D	Unit M.	3	Own	Sp. B.	Sp. B.	SS	32x3	SS	Opt.	Stewart	3	3 B.	RR	R.	
Dodge Brothers.....	D	985	31x44	24.0	212.3	4.17-1	Own.	L	H	P	Sp-Pr	P	N-East-1	12	Own	Stewart.	V	D	Unit M.	3	Own	Sp. B.	Sp. B.	SS	32x3	SS	Opt.	Stewart	3	3 B.	RR	R.	
Dodge Brothers.....	D	985	31x44	24.0	212.3	4.17-1	Own.	L	H	P	Sp-Pr	P	N-East-1	12	Own	Stewart.	V	D	Unit M.	3	Own	Sp. B.	Sp. B.	SS	32x3	SS	Opt.	Stewart	3	3 B.	RR	R.	
Dodge Brothers.....	D	985	31x44	24.0	212.3	4.17-1	Own.	L	H	P	Sp-Pr	P	N-East-1	12	Own	Stewart.	V	D	Unit M.	3	Own	Sp. B.	Sp. B.	SS	32x3	SS	Opt.	Stewart	3	3 B.	RR	R.	
Dodge Brothers.....	D	985	31x44	24.0	212.3	4.17-1	Own.	L	H	P	Sp-Pr																						

Feat.	55000	4	5100	44.1	584.0	2 78-1	2 78-1	1	Boech.	1/2	P. D.	4	Sp. B.	Tor. T.	S. F.	Ovn.	Tor. T.	140	3655	QD	Wd.	S. E.	Stewart.	8 P.	B. B.																																		
Ford	11	450	4 3145	22.5	176.7	3 04-1	3 04-1	1	12	1/2	Hol. Kng	2	Ovn.	Tor. T.	S. F.	Ovn.	100	3034	C.	Wd.	Trans.	None	8 P.	B. B.																																			
Franklin	9	2450	6 3145	25.3	199.1	4 33-1	4 33-1	1	12	1/2	Ovn.	3	Ovn.	Sp. B.	Spina.	Ovn.	115	3344	SS	Wd.	ELL.	Stewart.	7 B.	B. B.																																			
F.R.P.	7000	4 4100	6 3145	33.8	445.0	3 00-1	3 00-1	1	6	M	Stewart.	4	Ovn.	Bevl.	Spina.	Ovn.	140	3655	SS	Wd.	S. E.	Opt.	3 B.	B. B.																																			
Glide	1055	6 3145	6 3145	23.4	230.1	4 04-1	4 04-1	1	6	1/2	Rayfid	3	Ovn.	Sp. B.	Spina.	Ovn.	119	3444	SS	Wd.	ELL.	Stewart.	3 BP.	B. B.																																			
Grant	1245	6 3145	6 3145	21.6	180.2	4 50-1	4 50-1	1	6	1/2	Stamb.	3	Ovn.	Bevl.	Spina.	Ovn.	114	3263	SS	Wd.	W*	Stewart.	3 BP.	B. B.																																			
Hackett	985	4 3145	6 3145	22.5	187.7	4 00-1	4 00-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	112	3263	SS	Wd.	ELL.	Stewart.	3 B.	B. B.																																			
Halladay	1385	6 3145	6 3145	23.4	230.1	4 00-1	4 00-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	120	3444	SS	Wd.	ELL.	Stewart.	3 B.	B. B.																																			
Halladay	1575	6 3145	6 3145	16.9	174.2	4 00-1	4 00-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	106	3034	SS	Wd.	ELL.	Stewart.	3 BP.	B. B.																																			
Harroun	1995	4 3145	6 3145	14.4	120.2	4 00-1	4 00-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	106	3034	SS	Wd.	ELL.	Stewart.	3 BP.	B. B.																																			
Harvard	430	1950	6 3145	29.4	288.6	4 00-1	4 00-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	127	3544	SS	Wd.	S. E.	Warner.	3 BP.	B. B.																																			
Haynes	39	1950	6 3145	36.3	356.3	4 07-1	4 07-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	127	3544	SS	Wd.	S. E.	Warner.	3 BP.	B. B.																																			
Haynes	44	2910	12 3145	36.3	356.3	4 07-1	4 07-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	127	3544	SS	Wd.	S. E.	Warner.	3 BP.	B. B.																																			
Holier	188	1385	6 3145	28.8	240.3	4 50-1	4 50-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	116	3444	SS	Wd.	ELL.	Stewart.	3 B.	B. B.																																			
Holier	206	1455	6 3145	25.3	224.0	4 58-1	4 58-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	116	3444	SS	Wd.	ELL.	Stewart.	3 B.	B. B.																																			
Hudson	1950	6 3145	6 3145	29.4	288.6	4 45-1	4 45-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	125	3544	SS	Wd.	S. E.	Stewart.	4 B.	B. B.																																			
Hupmobile	1350	4 3145	6 3145	16.9	182.5	4 91-1	4 91-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	112	3244	SS	Wd.	S. E.	Van.	3 BP.	B. B.																																			
Inter-State	T	1000	4 3145	19.6	192.4	4 00-1	4 00-1	1	6	1/2	Schbl.	3	Ovn.	Bevl.	Spina.	Ovn.	110	3344	SS	Wd.	ELL.	Stewart.	3 BR.	B. B.																																			
Jackson	349	1495	8 3145	28.8	197.9	5 27-1	5 27-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	118	3444	SS	Wd.	ELL.	Stewart.	3 B.	B. B.																																			
Jones	27	1875	6 3145	29.4	205.9	4 45-1	4 45-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	126	3444	SS	Wd.	S. E.	Stewart.	3 B.	B. B.																																			
Jordan	J-6	1995	6 3145	29.4	303.1	4 08-1	4 08-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	127	3344	SS	Wd.	S. E.	Van.	3 BP.	B. B.																																			
King	2150	8 3145	6 3145	28.8	282.7	5 00-1	5 00-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	120	3444	SS	Wd.	ELL.	Stewart.	3 BP.	B. B.																																			
Kiesel	Hundred Pt. S	1495	6 3145	25.3	248.9	4 58-1	4 58-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	117	3444	SS	Wd.	ELL.	Stewart.	3 BP.	B. B.																																			
Kiesel	Double Six	2450	12 3145	29.6	260.0	4 58-1	4 58-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	128	3444	SS	Wd.	ELL.	Stewart.	3 BP.	B. B.																																			
Kline	6-38	1595	6 3145	25.3	224.0	4 75-1	4 75-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	120	3444	SS	Wd.	ELL.	Stewart.	3 BP.	B. B.																																			
Lexington	6-0	1485	6 3145	25.3	224.0	4 75-1	4 75-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	116	3244	SS	Wd.	ELL.	Stewart.	3 BP.	B. B.																																			
Lexington	6-8	1885	6 3145	25.3	224.0	5 00-1	5 00-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	122	3444	SS	Wd.	S. E.	Stewart.	3 BP.	B. B.																																			
Liberty	10-8	1485	6 3145	25.3	224.0	4 75-1	4 75-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	116	3244	SS	Wd.	S. E.	Stewart.	3 BP.	B. B.																																			
Locomobile	2-38	5000	6 4100	43.6	435.6	4 07-1	4 07-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	139	3745	QD	Wd.	S. E.	Warner.	7 B.	B. B.																																			
Locomobile	2-48	5950	6 4100	43.6	435.6	4 07-1	4 07-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	139	3745	QD	Wd.	S. E.	Warner.	7 B.	B. B.																																			
Lozier	84	1695	4 3145	32.9	369.0	3 91-1	3 91-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	120	3644	SS	Wd.	ELL.	Warner.	3 B.	B. B.																																			
Lozier	82	3250	6 3145	36.0	424.0	3 97-1	3 97-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	132	3644	SS	Wd.	ELL.	Warner.	3 B.	B. B.																																			
Lorier	760	1650	6 3145	33.7	348.0	4 00-1	4 00-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	132	3644	SS	Wd.	ELL.	Warner.	3 B.	B. B.																																			
Madison	1485	6 3145	6 3145	23.4	230.1	4 04-1	4 04-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	120	3444	SS	Wd.	ELL.	Stewart.	3 BP.	B. B.																																			
Madison	830	A	830	23.4	230.1	4 42-1	4 42-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	120	3444	SS	Wd.	ELL.	Stewart.	3 BP.	B. B.																																			
Matthom	3150	6 3145	6 3145	15.6	122.7	4 25-1	4 25-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	105	3034	SS	Wd.	S. E.	Stewart.	3 BP.	B. B.																																			
Matthom	3150	6 3145	6 3145	15.6	122.7	4 25-1	4 25-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	105	3034	SS	Wd.	S. E.	Stewart.	3 BP.	B. B.																																			
Maxwell	825	825	4 3145	21.0	185.8	3 58-1	3 58-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	109	3034	C.	Wd.	S. E.	Stewart.	3 BP.	B. B.																																			
Maxwell	825	825	4 3145	21.0	185.8	3 58-1	3 58-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	109	3034	C.	Wd.	S. E.	Stewart.	3 BP.	B. B.																																			
McFarlan	X	3800	4 3145	48.6	572.5	3 50-1	3 50-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	115	3244	SS	Wd.	S. E.	Stewart.	3 BP.	B. B.																																			
Mercer	Series 4	4000	4 3145	22.5	208.2	3 22-1	3 22-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	115	3244	SS	Wd.	S. E.	Stewart.	3 BP.	B. B.																																			
Meta	25	605	4 3145	24.0	188.7	4 00-1	4 00-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	132	3244	SS	Wd.	ELL.	Stewart.	3 BP.	B. B.																																			
Meta	25	605	4 3145	24.0	188.7	4 00-1	4 00-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	132	3244	SS	Wd.	ELL.	Stewart.	3 BP.	B. B.																																			
Mitchell	D-40	1350	6 3145	25.3	248.9	4 42-1	4 42-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	127	3244	SS	Wd.	ELL.	Stewart.	3 BP.	B. B.																																			
Mitchell	C-42	1625	6 3145	29.4	288.6	4 42-1	4 42-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	127	3244	SS	Wd.	ELL.	Stewart.	3 BP.	B. B.																																			
Moline-Knight	C	1750	4 3145	22.5	220.9	4 00-1	4 00-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	118	3444	SS	Wd.	ELL.	Stewart.	3 BP.	B. B.																																			
Moline-Knight	C	2375	4 3145	22.5	220.9	4 00-1	4 00-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	118	3444	SS	Wd.	ELL.	Stewart.	3 BP.	B. B.																																			
Monitor	J	1205	6 3145	25.4	224.0	4 08-1	4 08-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	117	3344	SS	Wd.	ELL.	Stewart.	3 BP.	B. B.																																			
Monroe	Club M-3	635	4 3145	14.4	120.2	4 00-1	4 00-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	95	3123	QD	Wd.	S. E.	Stewart.	3 B.	B. B.																																			
Monroe	Club M-3	635	4 3145	14.4	120.2	4 00-1	4 00-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	95	3123	QD	Wd.	S. E.	Stewart.	3 B.	B. B.																																			
Monroe	6-36	1305	6 3145	19.4	145.5	4 75-1	4 75-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	115	3244	SS	Wd.	S. E.	Stewart.	3 BP.	B. B.																																			
Monroe	6-66	2250	6 3145	20.8	165.5	4 45-1	4 45-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	125	3544	SS	Wd.	S. E.	Stewart.	3 BP.	B. B.																																			
Moore	30	705	4 3145	22.5	187.7	4 50-1	4 50-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	106	3034	C.	Wd.	S. E.	Stewart.	3 BP.	B. B.																																			
Murray	70-T	2800	8 3145	33.8	331.8	4 08-1	4 08-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	125	3544	SS	Wd.	ELL.	Stewart.	3 BP.	B. B.																																			
Nash	(682)	1545	6 3145	25.3	249.0	4 50-1	4 50-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	121	3444	SS	Wd.	S. E.	Stewart.	3 R.	B. B.																																			
Nash	(682)	1545	6 3145	25.3	249.0	4 50-1	4 50-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	121	3444	SS	Wd.	S. E.	Stewart.	3 R.	B. B.																																			
National	681-683	1395	6 3145	29.4	303.1	4 58-1	4 58-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	128	3444	QDR	Wd.	ELL.	Stewart.	3 B.	B. B.																																			
National	681-683	1395	6 3145	29.4	303.1	4 58-1	4 58-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	128	3444	QDR	Wd.	ELL.	Stewart.	3 B.	B. B.																																			
Nelson	12	2050	12 3145	15.6	145.7	4 25-1	4 25-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	105	3034	SS	Wd.	ELL.	Stewart.	3 BP.	B. B.																																			
Nelson	12	2050	12 3145	15.6	145.7	4 25-1	4 25-1	1	6	1/2	Bevl.	3	Ovn.	Bevl.	Spina.	Ovn.	105	3034	SS	Wd.	ELL.	Stewart.	3 BP.	B. B.																																			
Optional	1-Single Unit	1-Two Unit	2-Two Unit	3-Two Unit	4-Two Unit	5-Two Unit	6-Two Unit	7-Two Unit	8-Two Unit	9-Two Unit	10-Two Unit	11-Two Unit	12-Two Unit	13-Two Unit	14-Two Unit	15-Two Unit	16-Two Unit	17-Two Unit	18-Two Unit	19-Two Unit	20-Two Unit	21-Two Unit	22-Two Unit	23-Two Unit	24-Two Unit	25-Two Unit	26-Two Unit	27-Two Unit	28-Two Unit	29-Two Unit	30-Two Unit	31-Two Unit	32-Two Unit	33-Two Unit	34-Two Unit	35-Two Unit	36-Two Unit	37-Two Unit	38-Two Unit	39-Two Unit	40-Two Unit	41-Two Unit	42-Two Unit	43-Two Unit	44-Two Unit	45-Two Unit	46-Two Unit	47-Two Unit	48-Two Unit	49-Two Unit	50-Two Unit	51-Two Unit	52-Two Unit	53-Two Unit	54-Two Unit	55-Two Unit	56-Two Unit	57-Two Unit	58-Two Unit



## PASSENGER CARS—Continued

MAKE AND MODEL	No. of Cylinders	Bore and Stroke, Inches	S.A.E. H.P.	Piston Displacement	High Gear Ratio	Make of Engine	Cylinder Shape	Camshaft Drive	Water Circulation	System	Type of Pump	ELECTRIC SYSTEM		IGNI-TION		CARBU-RETION	TRANSMISSION				RUNNING GEAR				Number Crankshaft Bearings	BEARINGS						
												Make	Voltage	Make	Plug		Make of Carburetor	Fuel Feed	Clutch Type	Location	Forward	Make	Final Drive	Car Drives Through		Rear Axle Type	Make of Rear Axle	Torque Taken By	Wheelbase	Tire	Rims	Wheels
Oakland	6	2 1/4 x 4 1/4	19.0	177.0	4.50-1	Own	L. H.	L. H.	Pr	G.	G.	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Oldsmobile	8	2 1/4 x 4 1/4	19.0	177.0	4.58-1	North.	L. H.	L. H.	Pr	G.	G.	Remy-2	6	Remy	1/2	Marvel	V. C.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Oldsmobile	8	2 1/4 x 4 1/4	26.4	246.7	4.92-1	Own	L. H.	L. H.	Pr	G.	G.	Delco-2	6	Delco	1/2	Ball	V. C.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	120	32 1/4	SS	SS	3	3 Bp.	RR	R.
Olympian	6	3 1/4 x 4 1/4	18.2	149.3	4.75-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Overland	4	3 1/4 x 4 1/4	18.2	178.9	3.93-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Overland	4	3 1/4 x 4 1/4	27.2	240.5	4.00-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Overland	4	3 1/4 x 4 1/4	27.2	240.5	4.00-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Overland	4	3 1/4 x 4 1/4	38.4	324.0	4.60-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs	112	32 1/4	SS	SS	3	3 Bp.	RR	R.
Owen Magnetic	4	4 x 5 1/2	38.4	324.0	4.08-1	Own	L. H.	L. H.	Pr	G.	G.	A-Lite-2	6	Conn	1/2	Tiltan	V. C.	Unit X	3	Warner	Bevel	Sp. B.	Sp. B.	Springs</								



# Lamp Bulbs

## Lamp Bulbs

Car and Model	HEAD LAMPS		SIDE LAMPS		TAIL LAMP		DASH LAMP		Fuses Amp.	Socket	Wiring System	Type of Dimmer.	Remarks.
	Volt.	Cp.	Volt.	Cp.	Volt.	Cp.	Volt.	Cp.					
Abbott-Detroit.	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	D. Bulb.	Dash lamp Ediswan D.
Allen	6-8	18	6-8	4	6-8	2	6-8	2	15	E.S.	S.	Hdamps.	Spotlight, 7 v., 21 cp, double contact.
American	6-8	18	6-8	4H	3-4	2	6-8	2	20	E.S.	S.	Warner lens.	Tonneau & Steplights 6-8v., 4 cp.
Anderson.	6-8	21	6-8	12H	6-8	2	6-8	2	10	E.D.	D.	Resist.	Dash lamp Ediswan D.
Asperon.	6-8	18	6-8	4	6-8	2	6-8	2	25	E.S.	S.	Resist.	Dash lamp Ediswan D.
Auburn 39 B	6-8	15	6-8	12	6-8	2	6-8	2	10	E.S.	S.	Resist.	Dash lamp Ediswan D.
Auburn 44	6-8	24	6-8	4H	6-8	2	6-8	2	10	E.S.	S.	Resist.	Dash lamp Ediswan D.
Austin.	6-8	18	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Resist.	Dash lamp Ediswan D.
Bell	6-8	21	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Resist.	Dash lamp Ediswan D.
Biddle	12-16	40	12-16	4H	6-8	2	6-8	2	20	E.S.	S.	Resist.	Dash lamp Ediswan D.
Brewster.	6-8	21	6-8	4H	6-8	2	6-8	2	20	E.S.	S.	Resist.	Dash lamp Ediswan D.
Briscoe	6-8	15	6-8	4H	6-8	2	6-8	2	10	E.S.	S.	Resist.	Dash lamp Ediswan D.
Burt Davis.	6-8	15	6-8	4H	6-8	2	6-8	2	C.B.	E.S.	S.	Defect.	D. Bulb.
Buick	6-8	18	6-8	6	3-4	2	6-8	2	C.B.	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Cadillac	6-8	18	6-8	4H	6-8	2	6-8	2	(30)	E.S.	S.	Fuses 5 amp. in dimmer.	Dash and tail Ediswan S.
Case	6-8	15	6-8	4H	6-8	2	6-8	2	20	E.S.	S.	Dash lamp double.	Dash lamp double.
Chalmers.	6-8	15	6-8	4H	6-8	2	6-8	2	20	E.S.	S.	Inspe. lamp, 12-16 v., 3 cp.	Dash lamp double.
Chandler	6-8	12	6-8	4H	6-8	2	6-8	2	None	E.S.	S.	Resist.	Dash lamp Ediswan S.
Chrysler.	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Resist.	Dash lamp Ediswan S.
Chevrolet	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Resist.	Dash lamp Ediswan S.
Chevrolet	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Resist.	Dash lamp Ediswan S.
Cole.	6-8	21	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Resist.	Dash lamp Ediswan S.
Columbia	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Resist.	Dash lamp Ediswan S.
Columbia	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Resist.	Dash lamp Ediswan S.
Commonwealth	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Resist.	Dash lamp Ediswan S.
Crawford	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Resist.	Dash lamp Ediswan S.
Crow-Ellhart	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Resist.	Dash lamp Ediswan S.
Cunningham	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Resist.	Dash lamp Ediswan S.
Daniels	6-8	18	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Resist.	Dash lamp Ediswan S.
Davis	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Resist.	Dash lamp Ediswan S.
Dixie	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Resist.	Dash lamp Ediswan S.
Dixie-Fier.	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Resist.	Dash lamp Ediswan S.
Dodge-Detroit.	12-16	32	12-16	6	12-16	3	12-16	3	10	E.D.	D.	Warner lens.	Dash lamp Ediswan D.
Dodge Brothers	12-16	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Dodge Brothers	6-80	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Dorris	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Detroit	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Elgin.	6-8	21	6-8	4H	6-8	2	6-8	2	20	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Elcar	6-8	15	6-8	4H	6-8	2	6-8	2	20	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Empire.	6-8	15	6-8	4H	6-8	2	6-8	2	20	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Fiat	6-8	15	6-8	4H	6-8	2	6-8	2	20	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Ford	6-8	15	6-8	4H	6-8	2	6-8	2	20	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Franklin	12-16	21	12-16	4H	6-8	2	6-8	2	10	E.D.	D.	Warner lens.	Dash lamp Ediswan D.
Franklin	45-B	25	12-16	6	12-16	3	12-16	3	10	E.D.	D.	Warner lens.	Dash lamp Ediswan D.
Glide	6-40	6	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Grant	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Halladay	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Harmon	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Haynes	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Haynes	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Haller	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Hudson	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Hudson	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Inter-State	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Jackson	349	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Jones	27ABC	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Jordan	5-50	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
King	F	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens.	Dash lamp Ediswan D.
Kissel	6-38	15	6-8	4H	6-8	2							

ABBREVIATIONS:—C.B.—Circuit Breaker. Candel.—Candelabra. D.—Double wiring system. E.D.—Ediswan double contact. E.S.—Ediswan single contact. H.—Small bulbs in headlamps for city driving. Resist.—Resistance. S.—Single wiring system. Series—Series connection.

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Tires  
and Tubes

## MOTOR WORLD GUIDE

Tires  
and Tubes

This table appears in the first issue every month. It is corrected every month and brought up to date.

Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
ACME	Plain	17.60	18.90																						
	Kam Tread	19.70	21.60	25.30	26.30	26.80	26.80	s85.10	s86.10	36.50	37.70	39.00									63.50	65.50	67.50		
	Dimple	20.20	21.80	26.60	s26.60	28.20	28.20	s86.90	s86.90	38.50	39.70	41.00									66.70	68.70	70.70		
	Hemisphere	s22.20	s23.70	29.00	s30.10	30.80	30.80	s40.40	s40.40	42.10	43.60	45.10									72.90	75.40	77.60		
	Gray and Red Tubes	4.05	4.25	5.45	5.65	6.00	6.00	s44.60	s44.60	q646.30	48.00	49.40	51.00	52.90	52.90	8.95	9.15	q667.10	69.10	71.20	73.20	s80.30	82.70	85.40	12.30
ADVANCE	Plain	s15.40	s16.20	s21.10	s22.20	24.70	s28.80	s32.30	s32.30	33.00	34.50	35.30	36.50	37.60								s56.80	60.10	s80.20	12.65
	Non-Skid	s16.20	s17.05	s22.10	s23.40	25.90	s30.20	s33.90	s33.90	34.60	36.10	37.10	38.10	39.40								s59.50	s63.10	s84.00	
AJAX	Plain	s15.05	s15.90	20.45	21.45	24.80	29.65	33.30	33.30	33.90	35.30	35.90	37.50	38.00								57.75	59.90	61.75	87.25
	Non-Skid	16.85	17.70	s23.50	24.45	27.85	32.65	36.90	36.90	37.50	38.95	39.55	41.15	41.65								62.55	64.60	66.75	86.20
AMAZON	Road King	16.20	17.10	21.95	23.05	26.70	31.75	35.75	35.75	36.40	38.00	38.60	40.30	40.80								67.25	69.60	71.55	10.30
	Gray Tubes	3.55	3.80	3.75	4.15	4.25	4.40	4.75	5.35	5.55	5.80	5.90	6.03	6.25	6.25	6.75	7.00	7.15	7.25	7.55	7.70	9.25	9.35	9.45	10.10
ARCHER CORD	Red Tubes	3.85	4.15	4.40	5.05	5.25	5.40	5.65	6.50	6.65	6.90	7.00	7.15	7.40								10.90	11.00	11.15	11.95
	Ribbed	q818.50	q818.55	q824.00	q827.70	q827.70	q829.10	q838.35	q838.35	q837.45	q840.05	q840.75													
ARABIAN	Non-Skid	s19.55	q819.55	q825.25	q829.10	q829.10	q830.40	q839.40	q839.40	q839.40	q842.15	q842.90													
	Red and Gray Tubes	3.45	3.85	4.50	4.70	4.95	5.25	5.60	6.25	6.50	6.75	6.85	7.05	7.15								673.80	70.00	10.15	11.55
AMERICAN	Ribbed or Plain	17.60	18.50	22.50	24.30	28.25	35.55	36.35	36.35	36.30	38.15	39.00										63.35	69.25	70.65	10.65
	Triple A Non-Skid	3.35	3.45	4.20	4.30	4.35	4.45	5.35	5.35	5.45	5.65	5.80	5.93	6.10	6.75	6.90	7.05	7.25	7.55	7.75	8.70	8.95	9.10	10.40	
ARCHER CORD	Seal Brown Tubes	4.50	4.60	4.90	4.70	4.80	4.90	4.90	5.90	6.00	6.20	6.40	6.60	6.80								9.85	10.00	11.50	10.65
	Red Indian Tubes																								
ARMSTRONG	Cord Ribbed																								
	Cord Plain																								
BALTIMORE	Non-Skid	q844.50	q844.55	q849.60	q849.60	q850.82	q852.63	q854.01	q854.01	q854.01	q854.01	q854.01													
	Puncture-Proof Tubes	14.00	14.00	15.00	15.00	15.00	15.00	17.00	17.00	17.50	17.75	18.00										26.50	27.00	27.00	
BATAVIA	Concord	22.19	22.70	27.55	30.58	32.45	35.28	37.90	37.90	38.98	40.39	41.82	43.42	44.83								65.55	68.70	71.63	102.86
	Box Tread	24.41	25.60	32.01	33.03	36.54	39.69	44.16	44.16	45.82	46.95	48.64	50.22	51.90								74.54	79.25	83.94	114.71
BERGOUNGAN	Wil-Lox Non-Skid	3.25	3.34	4.30	4.45	4.60	4.95	5.45	5.45	5.55	5.75	5.95	6.05	6.20								9.15	9.45	9.45	11.05
	Plain	q815.80	q815.80	q820.65	q821.87	q824.25	q824.25	q831.73	q831.73	q832.40	q833.82	q834.72													
BOWERS	Ribbed	q815.80	q815.80	q820.65	q821.87	q824.25	q824.25	q831.73	q831.73	q832.40	q833.82	q834.72													
	Security Tread	q815.80	q815.80	q820.65	q821.87	q824.25	q824.25	q831.73	q831.73	q832.40	q833.82	q834.72													
BOWERS	Gray Tubes	3.25	3.35	3.80	4.00	4.20	4.50	5.40	5.40	5.55	5.75	5.95	6.00	6.10											
	Non-Skid	q816.30	q816.30	q823.05	q824.40	q826.70	q826.70	q834.05	q834.05	q835.80	q837.40	q838.05	q839.80	q840.40											
BOWERS	Red Tubes	3.50	3.60	4.15	4.50	4.60	4.90	5.65	5.65	5.85	6.15	6.30	6.45	6.55											
	Be-Saw Non-Skid	24.25	24.50	30.30	31.35	35.05	38.00	42.30	42.30	43.70	45.00	46.55	48.10	50.75								71.35	74.15	75.90	90.95
BOWERS	Be-Saw Plain	20.50	20.50	24.90	27.65	29.30	31.80	34.30	34.30	35.55	36.90	38.15	39.30	40.50								57.80	59.40	60.90	90.95
	Smooth	14.20	18.15	19.40	21.10	22.85	25.95	28.25	28.25	28.95	30.15	30.95	31.95	33.10								50.75	53.80	55.30	111.85
BOWERS	Ribbed Non-Skid	15.60	19.95	21.34	23.21	26.70	31.65	36.65	36.65	37.40	38.40	39.05	40.10	41.60								55.50	59.30	60.90	90.95
	Special Non-Skid	18.50	23.50	25.30	27.45	30.85	35.85	40.85	40.85	41.60	42.60	43.60	44.60	45.60								60.55	64.05	67.55	111.85
BOWERS	Black Tubes	3.40	3.80	4.00	4.20	4.50	5.40	5.40	5.55	5.85	6.15	6.30	6.45	6.55								66.55	68.02	69.50	90.95
	Red Tubes	3.95	4.50	4.70	4.95	5.25	6.40	6.40	6.60	6.90	7.20	7.40	7.55	7.65								9.35	9.55	10.40	10.55
BOWERS	Gray Tubes	3.05	3.45	3.65	4.65	4.85	4.90	4.90	4.90	5.05	5.25	5.35	5.55	5.65								8.10	8.40	8.40	10.55
	Plain	18.55	19.65	25.40	28.05	29.65	31.70	34.90	34.90	36.00	37.60	38.90	41.95	44.05								67.70	69.30	70.80	90.95
BOWERS	Grip Tread	20.60	23.60	31.15	32.15	34.90	38.00	41.05	41.05	42.70	45.05	46.70	48.20	49.30								72.65	75.50	77.05	111.85
	Gray Tubes	3.30	3.80	4.10	4.35	4.60	4.85	5.05	5.05	5.10	5.25	5.40	5.60	5.75								9.50	9.70	10.00	11.75



Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	32x3½	34x3½	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
BRAENDER	Plain	s15.35	s15.75		20.20	s21.40	23.45	26.45	31.00	31.75	33.15	34.00	35.70	36.20	42.75	44.05	45.50	47.55	48.35	50.15	55.75	56.70	59.00	s96.50
	Non-Skid	s17.80	s18.40		23.45	s24.75	27.15	31.00	36.20	37.00	38.90	39.75	41.70	42.35	50.00	51.50	53.25	55.65	56.50	58.70	63.10	66.35	69.10	s105.80
	Gray Tubes	3.30	3.35	4.15	4.25	4.40	4.45	5.20	5.40	5.55	5.70	5.85	6.25	6.30	7.15	7.25	7.40	7.60	7.70	7.85	8.90	9.10	9.25	s111.90
BRUNSWICK	Plain	q14.65	q15.80		q20.05	q21.55	23.50	c26.60	q31.30	s31.95	33.50	c34.30	s35.85	c36.40	q42.75	c44.05	c45.50	s47.65	e48.35	c50.40	c55.80	c56.70	c59.20	s107.50
	Skid-Not	q17.15	q18.50		q23.50	q25.30	27.15	c31.20	q36.65	q37.45	39.20	c40.10	c41.90	c42.55	q48.60	q50.10	q51.60	s53.25	e54.00	c56.30	c63.50	c66.35	c69.25	s113.05
	Gray Tubes	3.30	3.35	4.00	4.00	4.20	4.20	4.60	5.40	5.55	5.80	5.95	6.00	6.15	7.15	7.30	7.45	7.60	7.70	7.85	8.95	9.15	9.30	10.75
BULL	Plain	q15.50	q16.10		q20.55	q22.45	24.25	c27.35	q31.35	q31.90	33.75	c34.25	c35.60	c37.35	q42.75	c44.05	c45.50	s47.65	e48.35	c50.40	c55.80	c56.70	c59.20	s107.50
	Non-Skid	q18.00	q18.50		q23.50	q25.30	27.15	c31.20	q36.65	q37.45	39.20	c40.10	c41.90	c42.55	q48.60	q50.10	q51.60	s53.25	e54.00	c56.30	c63.50	c66.35	c69.25	s113.05
	Gray Tubes	3.30	3.35	4.00	4.00	4.20	4.20	4.60	5.40	5.55	5.80	5.95	6.00	6.15	7.15	7.30	7.45	7.60	7.70	7.85	8.95	9.15	9.30	10.75
CAPITOL	Plain	q15.50	q16.10		q20.55	q22.45	24.25	c27.35	q31.35	q31.90	33.75	c34.25	c35.60	c37.35	q42.75	c44.05	c45.50	s47.65	e48.35	c50.40	c55.80	c56.70	c59.20	s107.50
	Non-Skid	q18.00	q18.50		q23.50	q25.30	27.15	c31.20	q36.65	q37.45	39.20	c40.10	c41.90	c42.55	q48.60	q50.10	q51.60	s53.25	e54.00	c56.30	c63.50	c66.35	c69.25	s113.05
	Gray Tubes	3.30	3.35	4.00	4.00	4.20	4.20	4.60	5.40	5.55	5.80	5.95	6.00	6.15	7.15	7.30	7.45	7.60	7.70	7.85	8.95	9.15	9.30	10.75
CARLISLE	Plain	q15.50	q16.10		q20.55	q22.45	24.25	c27.35	q31.35	q31.90	33.75	c34.25	c35.60	c37.35	q42.75	c44.05	c45.50	s47.65	e48.35	c50.40	c55.80	c56.70	c59.20	s107.50
	Non-Skid	q18.00	q18.50		q23.50	q25.30	27.15	c31.20	q36.65	q37.45	39.20	c40.10	c41.90	c42.55	q48.60	q50.10	q51.60	s53.25	e54.00	c56.30	c63.50	c66.35	c69.25	s113.05
	Gray Tubes	3.30	3.35	4.00	4.00	4.20	4.20	4.60	5.40	5.55	5.80	5.95	6.00	6.15	7.15	7.30	7.45	7.60	7.70	7.85	8.95	9.15	9.30	10.75
CARSRING	Plain	15.20	15.60	19.00	20.30	21.40	23.65	30.70	31.70	33.15	34.00	35.70	36.20	42.75	44.05	45.50	s47.65	e48.35	c50.40	c55.80	c56.70	c59.20	s107.50	
	Non-Skid	15.95	16.40	21.25	21.25	22.40	24.70	32.15	32.65	33.20	34.80	35.65	42.90	37.95	50.00	51.50	53.25	55.65	56.50	58.70	63.10	66.35	69.10	s105.80
	Gray Tubes	3.25	3.30	3.75	4.15	4.20	4.25	5.00	5.25	5.35	5.55	5.70	6.25	6.30	7.15	7.25	7.40	7.60	7.70	7.85	8.90	9.45	9.85	
CENTURY-PLAINFIELD	Plain	15.20	15.60	19.00	20.30	21.40	23.65	30.70	31.70	33.15	34.00	35.70	36.20	42.75	44.05	45.50	s47.65	e48.35	c50.40	c55.80	c56.70	c59.20	s107.50	
	Non-Skid	15.95	16.40	21.25	21.25	22.40	24.70	32.15	32.65	33.20	34.80	35.65	42.90	37.95	50.00	51.50	53.25	55.65	56.50	58.70	63.10	66.35	69.10	s105.80
	Gray Tubes	3.25	3.30	3.75	4.15	4.20	4.25	5.00	5.25	5.35	5.55	5.70	6.25	6.30	7.15	7.25	7.40	7.60	7.70	7.85	8.90	9.45	9.85	
CHAMPION	Plain	15.20	15.60	19.00	20.30	21.40	23.65	30.70	31.70	33.15	34.00	35.70	36.20	42.75	44.05	45.50	s47.65	e48.35	c50.40	c55.80	c56.70	c59.20	s107.50	
	Non-Skid	15.95	16.40	21.25	21.25	22.40	24.70	32.15	32.65	33.20	34.80	35.65	42.90	37.95	50.00	51.50	53.25	55.65	56.50	58.70	63.10	66.35	69.10	s105.80
	Gray Tubes	3.25	3.30	3.75	4.15	4.20	4.25	5.00	5.25	5.35	5.55	5.70	6.25	6.30	7.15	7.25	7.40	7.60	7.70	7.85	8.90	9.45	9.85	
CHESTER	Plain	s15.50	s16.10	s20.55	20.55	s22.45	24.25	27.35	s31.35	31.90	33.75	34.25	s35.60	s37.35	q42.75	c44.05	c45.50	s47.65	e48.35	c50.40	c55.80	c56.70	c59.20	s107.50
	Non-Skid	s17.40	s18.05	s20.55	20.55	s22.45	24.25	27.35	s31.35	31.90	33.75	34.25	s35.60	s37.35	q42.75	c44.05	c45.50	s47.65	e48.35	c50.40	c55.80	c56.70	c59.20	s107.50
	Gray Tubes	3.40	3.45	4.20	4.20	4.40	4.40	5.20	5.35	5.55	5.75	5.75	6.95	7.25	8.75	9.00	9.25	9.50	9.50	10.10	10.10	10.35	10.35	9.05
CLEVELAND-STANDARD	Plain	22.80	24.40	31.25	32.25	35.70	38.75	42.80	44.50	45.60	46.50	47.20	49.00	51.80	52.70	53.60	55.00	56.95	59.00	62.50	68.75	73.80	77.50	99.50
	Non-Skid	24.40	26.00	32.85	33.85	37.30	40.35	44.40	46.10	47.20	48.10	49.00	50.80	53.60	54.50	55.40	56.80	58.85	61.90	65.40	72.65	77.70	112.00	
	Gray Tubes	4.00	4.05	4.75	4.75	5.50	5.50	6.25	6.25	6.45	6.45	6.55	6.75	6.95	7.80	7.85	8.05	8.10	8.30	8.65	9.80	11.10	12.75	13.05
COLUMBIA	Plain	15.20	15.60	19.00	20.30	21.40	23.65	30.70	31.70	33.15	34.00	35.70	36.20	42.75	44.05	45.50	s47.65	e48.35	c50.40	c55.80	c56.70	c59.20	s107.50	
	Non-Skid	15.95	16.40	21.25	21.25	22.40	24.70	32.15	32.65	33.20	34.80	35.65	42.90	37.95	50.00	51.50	53.25	55.65	56.50	58.70	63.10	66.35	69.10	s105.80
	Gray Tubes	3.25	3.30	3.75	4.15	4.20	4.25	5.00	5.25	5.35	5.55	5.70	6.25	6.30	7.15	7.25	7.40	7.60	7.70	7.85	8.90	9.45	9.85	
CONVERSE	Plain	15.20	15.60	19.00	20.30	21.40	23.65	30.70	31.70	33.15	34.00	35.70	36.20	42.75	44.05	45.50	s47.65	e48.35	c50.40	c55.80	c56.70	c59.20	s107.50	
	Non-Skid	15.95	16.40	21.25	21.25	22.40	24.70	32.15	32.65	33.20	34.80	35.65	42.90	37.95	50.00	51.50	53.25	55.65	56.50	58.70	63.10	66.35	69.10	s105.80
	Gray Tubes	3.25	3.30	3.75	4.15	4.20	4.25	5.00	5.25	5.35	5.55	5.70	6.25	6.30	7.15	7.25	7.40	7.60	7.70	7.85	8.90	9.45	9.85	
CORTLAND	Plain	s15.50	s16.35	s20.55	20.55	s22.45	24.25	27.35	s31.35	31.90	33.75	34.25	s35.60	s37.35	q42.75	c44.05	c45.50	s47.65	e48.35	c50.40	c55.80	c56.70	c59.20	s107.50
	Non-Skid	s17.40	s18.05	s20.55	20.55	s22.45	24.25	27.35	s31.35	31.90	33.75	34.25	s35.60	s37.35	q42.75	c44.05	c45.50	s47.65	e48.35	c50.40	c55.80	c56.70	c59.20	s107.50
	Gray Tubes	3.40	3.45	4.20	4.20	4.40	4.40	5.20	5.35	5.55	5.75	5.75	6.95	7.25	8.75	9.00	9.25	9.50	9.50	10.10	10.10	10.35	10.35	9.05
CUPPLES	Plain	q24.50	q25.50	q28.00	28.00	q30.00	32.00	q34.00	q35.00	q36.00	q37.00	q38.00	q39.00	q40.00	q41.00	q42.00	q43.00	q44.00	q45.00	q46.00	q47.00	q48.00	q49.	

## TIRES AND TUBES—Continued

Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
DELION	Plain Non-Skid Red Tubes	17.75 19.55 3.85	25.10 28.60 4.55	29.10 32.00 5.00	26.60 29.25 4.90	34.30 37.75 6.15	36.45 40.10 6.35	39.00 42.90 6.70	41.20 45.30 6.85	42.20 46.40 7.05	44.40 48.85 7.25	51.90 56.75 8.15	58.80 64.70 8.25	56.50 62.15 8.35	57.10 62.80 8.80	58.80 64.70 8.95	58.80 64.70 8.95	58.80 64.70 8.95	58.80 64.70 8.95	58.80 64.70 8.95	65.90 72.50 9.90	67.30 74.05 10.20	69.15 76.05 10.40	89.05 98.00 101.40	92.20 101.40 11.50
	Smooth Squeezee Gray Tubes Red Tubes	qs15.55 qs16.30 3.40 3.75	qs20.20 qs21.10 4.25 4.70	qs23.45 qs24.55 4.50 4.95	qs21.25 qs22.30 4.35 4.80	qs30.95 qs32.40 5.50 6.05	qs33.00 qs34.55 5.65 6.20	qs34.00 qs35.40 5.85 6.40	qs35.40 qs36.85 6.05 6.55	qs36.85 qs38.30 6.25 6.75	qs38.30 qs39.75 6.45 6.95	qs39.75 qs41.15 6.65 7.15	qs41.15 qs42.55 6.85 7.35	qs42.55 qs44.00 7.05 7.55	qs44.00 qs45.45 7.25 7.75	qs45.45 qs46.85 7.45 7.95	qs46.85 qs48.30 7.65 8.15	qs48.30 qs49.75 7.85 8.35	qs49.75 qs51.15 8.05 8.55	qs51.15 qs52.55 8.25 8.75	qs52.55 qs54.00 8.45 8.95	qs54.00 qs55.45 8.65 9.10	qs55.45 qs56.85 8.85 9.30	qs56.85 qs58.30 9.05 9.50	
DOUBLE FABRIC	Ribbed Type Xtra-Ply Duo Cord Non-Skid Brazil Gray Tubes	qs18.00 qs19.20 3.45 3.70	qs24.90 qs26.15 4.20 4.25	qs29.35 qs30.60 4.45 4.45	qs26.85 qs28.10 4.25 4.25	qs36.20 qs37.45 5.65 5.90	qs39.05 qs40.30 5.95 6.00	qs41.05 qs42.30 6.15 6.10	qs42.30 qs43.55 6.35 6.30	qs43.55 qs44.80 6.55 6.50	qs44.80 qs46.05 6.75 6.70	qs46.05 qs47.30 6.95 6.90	qs47.30 qs48.55 7.15 7.10	qs48.55 qs49.80 7.35 7.30	qs49.80 qs51.05 7.55 7.50	qs51.05 qs52.30 7.75 7.70	qs52.30 qs53.55 7.95 7.90	qs53.55 qs54.80 8.15 8.10	qs54.80 qs56.05 8.35 8.30	qs56.05 qs57.30 8.55 8.50	qs57.30 qs58.55 8.75 8.70	qs58.55 qs59.80 8.95 8.90	qs59.80 qs61.05 9.15 9.10	qs61.05 qs62.30 9.35 9.30	
	Vacuum Red Ribbed Tread Super-Dreadnaught Red Tubes Super-Dreadnaught Gray Tubes	qs20.70 qs21.80 3.70 3.35	qs24.90 qs26.15 4.20 4.15	qs29.35 qs30.60 4.45 4.25	qs26.85 qs28.10 4.25 4.15	qs36.20 qs37.45 5.65 5.40	qs39.05 qs40.30 5.95 5.70	qs41.05 qs42.30 6.15 5.85	qs42.30 qs43.55 6.35 6.05	qs43.55 qs44.80 6.55 6.25	qs44.80 qs46.05 6.75 6.45	qs46.05 qs47.30 6.95 6.65	qs47.30 qs48.55 7.15 6.85	qs48.55 qs49.80 7.35 7.05	qs49.80 qs51.05 7.55 7.25	qs51.05 qs52.30 7.75 7.45	qs52.30 qs53.55 7.95 7.65	qs53.55 qs54.80 8.15 7.85	qs54.80 qs56.05 8.35 8.05	qs56.05 qs57.30 8.55 8.25	qs57.30 qs58.55 8.75 8.45	qs58.55 qs59.80 8.95 8.65	qs59.80 qs61.05 9.15 8.85	qs61.05 qs62.30 9.35 9.05	
DRY CLIMATE	Plain Non-Skid Red Tubes Gray Tubes	15.80 18.50 3.35 3.35	20.05 23.50 4.95 3.90	23.50 27.45 5.05 4.00	23.50 27.45 5.05 4.00	31.30 36.65 7.05 5.55	33.50 39.25 7.45 5.80	35.70 41.45 7.85 6.20	37.90 43.65 8.25 6.60	40.10 45.85 8.65 7.00	42.30 48.05 9.05 7.40	44.50 50.25 9.45 7.80	46.70 52.45 9.85 8.20	48.90 54.65 10.25 8.60	51.10 56.90 10.65 9.00	53.30 59.05 11.05 9.40	55.50 61.25 11.45 9.80	57.70 63.45 11.85 10.20	59.90 65.65 12.25 10.60	62.10 67.85 12.65 11.00	64.30 70.05 13.05 11.40	66.50 72.25 13.45 11.80	68.70 74.45 13.85 12.20	70.90 76.65 14.25 12.60	
	Cross Groove Traction Non-Skid Tubes	27.95 30.90 5.40	32.65 37.30 6.00	33.90 39.00 6.25	36.30 41.40 6.40	38.95 44.00 6.60	41.55 46.60 6.80	44.15 49.20 7.00	46.75 51.80 7.20	49.35 54.40 7.40	51.95 57.00 7.60	54.55 59.60 7.80	57.15 62.20 8.00	59.75 64.80 8.20	62.35 67.40 8.40	64.95 70.00 8.60	67.55 72.60 8.80	70.15 75.20 9.00	72.75 77.80 9.20	75.35 80.40 9.40	77.95 83.00 9.60	80.55 85.60 9.80	83.15 88.20 10.00	85.75 90.80 10.20	
DUNLOP	Red Tubes Gray Tubes	3.85 3.40 3.45	4.70 4.20 4.30	4.90 4.40 4.30	4.90 4.40 4.30	5.35 4.85 4.50	5.60 5.10 4.75	5.85 5.35 5.00	6.10 5.60 5.25	6.35 5.85 5.50	6.60 6.10 5.75	6.85 6.35 6.00	7.10 6.60 6.25	7.35 6.85 6.50	7.60 7.10 6.75	7.85 7.35 7.00	8.10 7.60 7.25	8.35 7.85 7.50	8.60 8.10 7.75	8.85 8.35 8.00	9.10 8.60 8.25	9.35 8.85 8.50	9.60 9.10 8.75	9.85 9.35 9.00	
	Track and Non-Skid Tread Universal Gray Tubes Universal Red Tubes	16.40 15.85 3.50 3.85	20.65 20.65 4.00 4.60	24.25 24.25 4.35 4.80	27.85 27.85 4.60 5.10	31.45 31.45 4.90 5.40	35.05 35.05 5.20 5.70	38.65 38.65 5.50 6.00	42.25 42.25 5.80 6.30	45.85 45.85 6.10 6.60	49.45 49.45 6.40 6.90	53.05 53.05 6.70 7.20	56.65 56.65 7.00 7.50	60.25 60.25 7.30 7.80	63.85 63.85 7.60 8.10	67.45 67.45 7.90 8.40	71.05 71.05 8.20 8.70	74.65 74.65 8.50 9.00	78.25 78.25 8.80 9.30	81.85 81.85 9.10 9.60	85.45 85.45 9.40 9.90	89.05 89.05 9.70 10.20	92.65 92.65 10.00 10.50	96.25 96.25 10.30 10.80	
EMPIRE	Smooth Gray Non-Skid Gray Tubes Non-Skid Cord Non-Skid Gray Tubes Red Tubes	qs17.70 qs18.50 19.50 3.30 3.80	qs22.45 qs23.25 26.05 3.90 4.45	qs24.65 qs25.45 27.40 4.05 4.60	qs26.85 qs27.65 29.40 4.15 4.70	qs31.55 qs32.35 34.30 4.30 4.85	qs33.75 qs34.55 36.30 4.45 5.00	qs35.95 qs36.75 38.30 4.60 5.15	qs38.15 qs38.95 40.30 4.75 5.30	qs40.35 qs41.15 42.30 4.90 5.45	qs42.55 qs43.35 44.30 5.05 5.60	qs44.75 qs45.55 46.60 5.20 5.75	qs46.95 qs47.75 48.60 5.35 5.90	qs49.15 qs49.95 50.90 5.50 6.05	qs51.35 qs52.15 53.00 5.65 6.20	qs53.55 qs54.35 55.10 5.80 6.35	qs55.75 qs56.55 56.60 5.95 6.50	qs57.95 qs58.75 58.60 6.10 6.65	qs60.15 qs60.95 59.40 6.25 6.80	qs62.35 qs63.15 60.60 6.40 6.95	qs64.55 qs65.35 61.80 6.55 7.10	qs66.75 qs67.55 62.90 6.70 7.25	qs68.95 qs69.75 64.00 6.85 7.40	qs71.15 qs71.95 65.10 7.00 7.55	
	Ball Bearing Non-Skid Gray Tubes Red Tubes	qs22.40 3.80 4.25	qs28.75 4.45 4.80	qs30.25 4.60 5.00	qs31.75 4.75 5.15	qs33.25 4.90 5.30	qs34.75 5.05 5.45	qs36.25 5.20 5.60	qs37.75 5.35 5.75	qs39.25 5.50 5.90	qs40.75 5.65 6.05	qs42.25 5.80 6.20	qs43.75 5.95 6.35	qs45.25 6.10 6.50	qs46.75 6.25 6.65	qs48.25 6.40 6.80	qs49.75 6.55 6.95	qs51.25 6.70 7.10	qs52.75 6.85 7.25	qs54.25 7.00 7.40	qs55.75 7.15 7.55	qs57.25 7.30 7.70	qs58.75 7.45 7.85	qs60.25 7.60 8.00	
FALLS	Tractor Ribbed "Neverless" Non-Skid Cord Ribbed Cord "Neverless" Pure Gum Green Tubes	qs16.25 qs20.85 qs22.60 3.65	qs21.00 qs28.00 qs30.35 4.65	qs24.70 qs31.30 qs33.30 4.70	qs28.40 qs35.00 qs37.00 4.80	qs32.10 qs38.70 qs40.70 4.95	qs35.80 qs42.40 qs44.40 5.10	qs39.50 qs46.10 qs48.10 5.25	qs43.20 qs49.80 qs51.80 5.40	qs46.90 qs53.50 qs55.50 5.55	qs50.60 qs57.20 qs59.20 5.70	qs54.30 qs60.90 qs62.90 5.85	qs58.00 qs64.60 qs66.60 6.00	qs61.70 qs68.30 qs70.30 6.15	qs65.40 qs72.00 qs74.00 6.30	qs69.10 qs75.70 qs77.70 6.45	qs72.80 qs79.40 qs81.40 6.60	qs76.50 qs83.10 qs85.10 6.75	qs80.20 qs86.80 qs88.80 6.90	qs83.90 qs90.50 qs92.50 7.05	qs87.60 qs94.20 qs96.20 7.20	qs91.30 qs97.90 qs99.90 7.35	qs95.00 qs101.60 qs103.60 7.50	qs98.70 qs105.30 qs107.30 7.65	
	Plain Traffic Tread Rugged Tread Cord Non-Skid Gray Tubes Red Tubes	qs15.80 qs16.60 qs18.80 3.00 3.60	qs20.60 qs21.60 qs23.60 4.05	qs22.70 qs23.70 qs25.70 4.15	qs24.80 qs25.80 qs27.80 4.25	qs26.90 qs27.90 qs29.90 4.35	qs29.00 qs30.00 qs32.00 4.45	qs31.10 qs32.10 qs34.10 4.55	qs33.20 qs34.20 qs36.20 4.65	qs35.30 qs36.30 qs38.30 4.75	qs37.40 qs38.40 qs40.40 4.85	qs39.50 qs40.50 qs42.50 4.95	qs41.60 qs42.60 qs44.60 5.05	qs43.70 qs44.70 qs46.70 5.15	qs45.80 qs46.80 qs48.80 5.25	qs47.90 qs48.90 qs50.90 5.35	qs50.00 qs51.00 qs53.00 5.45	qs52.10 qs53.10 qs55.10 5.55	qs54.20 qs55.20 qs57.20 5.65	qs56.30 qs57.30 qs59.30 5.75	qs58.40 qs59.40 qs61.40 5.85	qs60.50 qs61.50 qs63.50 5.95	qs62.60 qs63.60 qs65.60 6.05	qs64.70 qs65.70 qs67.70 6.15	
FEDERAL	Round Tread Non-Skid Triple Tread Cord Non-Skid Gray Tubes Red Tubes	14.85 16.90 3.15 3.80	19.75 23.00 38.75 3.80	21.50 24.60 41.75 3.95	23.50 26.60 44.50 4.00	25.50 28.60 47.40 4.15	27.50 30.60 50.30 4.25	29.50 32.60 53.20 4.35	31.50 34.60 56.10 4.45	33.50 36.60 59.00 4.55	35.50 38.60 61.90 4.65	37.50 40.60 64.80 4.75	39.50 42.60 67.70 4.85	41.50 44.60 70.60 4.95	43.50 46.60 73.50 5.05	45.50 48.60 76.40 5.15	47.50 50.60 79.30 5.25	49.50 52.60 82.20 5.35	51.50 54.60 85.10 5.45	53.50 56.60 88.00 5.55	55.50 58.60 90.90 5.65	57.50 60.60 93.80 5.75	59.50 62.60 96.70 5.85	61.50 64.60 99.60 5.95	
	Gray and Black Non-Skid Ribbed Cord Non-Skid Gray Tubes	qs16.20 qs17.00 qs19.10 3.25	qs22.40 qs23.20 qs25.30 4.00	qs24.60 qs25.40 qs27.50 4.15	qs26.80 qs27.60 qs29.70 4.25	qs29.00 qs29.80 qs31.90 4.35	qs31.20 qs32.00 qs34.10 4.45	qs33.40 qs34.20 qs36.30 4.55	qs35.60 qs36.40 qs38.50 4.65	qs37.80 qs38.60 qs40.70 4.75	qs40.00 qs40.80 qs42.90 4.85	qs42.20 qs43.00 qs45.10 4.95	qs44.40 qs45.20 qs47.30 5.05	qs46.60 qs47.40 qs49.50 5.15	qs48.80 qs49.60 qs51.70 5.25	qs51.00 qs51.80 qs53.90 5.35	qs53.20 qs54.00 qs56.10 5.45	qs55.40 qs56.20 qs58.30 5.55	qs57.60 qs58.40 qs60.50 5.65	qs59.80 qs60.60 qs62.70 5.75	qs62.00 qs62.80 qs64.90 5.85	qs64.20 qs65.00 qs67.10 5.95	qs66.40 qs67.20 qs69.30 6.05	qs68.60 qs69.40 qs71.50 6.15	
FIRESTONE	Plain "G" Anti-Skid Stalwart Cord Gray Tubes Red Tubes	14.00 15.95 18.05 3.15	19.75 20.70 23.50 4.15	20.75 21.80 24.70 4.25	22.90 23.95 26.80 4.35	25.05 26.10 29.00 4.45	27.20 28.25 31.15 4.55	29.35 30.40 33.30 4.65	31.50 32.55 35.45 4.75	33.65 34.70 37.60 4.85	35.80 36.85 39.75 4.95	37.95 39.													



N name	28x3	30x3	32x3	30x3 1/2	31x3 1/2	32x3 1/2	34x3 1/2	31x4	32x4	33x4	34x4	35x4	36x4	32 4 1/2	33 4 1/2	34x4 1/2	35x4 1/2	36x4 1/2	37x4 1/2	35x5	36x5	37x5	37x5 1/2	38x5 1/2
GENERAL																								
	Plain	18.95																						
	Non-Skid Fabric	20.20	21.50	23.15	29.35	28.80	32.75	37.00	38.15	40.50	41.20	42.75	43.35			50.70	53.15	55.30	58.80	65.35	67.10	67.55		
	Gray Tubes	3.40	3.50	4.05	4.90	4.90	5.65	6.75	7.35	7.55	7.55	7.70	8.20	8.55	8.80	9.00	9.25	9.65	10.40	10.50	10.65	10.95	11.65	13.35
GILLETTE SAFETY																								
	Ribbed Non-Skid	16.40	15.25	19.75	26.25	23.20	26.25	31.00	31.00	33.05	33.55	36.95	35.50	41.25	43.75	45.55	47.65	48.35	48.35	55.50	61.90	57.60		
	Plain Cord	17.25	17.00	23.50	29.65	26.50	29.65	34.65	35.50	37.30	37.95	39.95	40.60	48.65	50.30	51.50	53.50	54.00	54.00	63.65	64.75	67.15		
	Non-Skid Cord			35.20	40.05	37.00	40.05	46.20	47.85	49.10	50.45	53.90	53.90	58.15	59.50	59.50	59.50	59.50	70.60	70.60	73.90			
GLOBE																								
	Gray Tube	2.75	3.00	3.95	4.00	4.25	4.50	5.25	5.35	5.50	5.65	6.05	6.05	6.65	6.85	6.85	6.85	6.85	79.40	79.40	83.20			
	Hard Service Red Tube			4.65	4.90	4.90	5.35	6.00	6.05	6.15	6.30	6.55	6.55			8.10	8.25	8.40	8.40	8.40	8.15	8.30		
GOODRICH																								
	Good Grip Non-Skid	s21.40	s21.05	s26.50	27.35	s30.25	31.10	33.85	37.10	37.50	39.35	41.25	41.65	42.60	47.05	q49.05	50.80	52.35	53.85	55.35	62.15	64.20	65.70	s85.45
	Red Tubes	s24.05	s23.95	s29.40	30.25	s33.05	34.90	38.95	40.95	41.65	43.50	44.30	46.10	46.50	51.05	q53.60	57.05	60.35	63.95	66.20	71.50	72.95	78.05	s97.45
	Gray Tubes	3.70	3.85	4.15	4.45	4.70	4.75	5.00	6.25	6.45	6.70	6.85	6.95	7.30	8.15	8.25	8.40	8.55	8.75	8.95	9.30	10.30	11.55	s104.55
GOODRICH																								
	Safety Tread	q15.20	q15.85	q15.85	q19.60	q20.70	q23.05	q30.25	q30.80	q32.15	q32.95	q32.95	q34.55	q42.90	q42.90	q44.35	q46.40	q47.10	q47.10	q52.90	q55.90	q55.90		
	Gray Tubes	3.45	3.50	3.50	4.20	4.30	4.35	5.35	5.45	5.65	5.75	5.85	6.15	6.75	6.90	7.05	7.25							
	Brown Tubes	3.80			4.60	4.75		5.90	6.00	6.20	6.40	6.50	6.75	7.45	7.55									
GOODYEAR																								
	S. S. Silvertown Ribbed Tread																							
	Q. D. Silvertown Ribbed Tread																							
	Q. D. Silvertown Safety Tread																							
GOODYEAR																								
	Plain	q15.80	q18.50	q20.05	q21.55	q23.50	q23.50	q31.30	q31.95	q33.50	q34.30	q34.30	q34.30	q34.30	q34.30	q34.30	q34.30	q34.30	q34.30	q34.30	q34.30	q34.30	q34.30	q34.30
	All-Weather																							
	Ribbed Tread Cord	q18.50	q21.40	q23.80	q25.30	q27.45	q31.20	q36.65	q37.40	q39.25	q40.10	q41.00	q41.00	q41.00	q41.00	q41.00	q41.00	q41.00	q41.00	q41.00	q41.00	q41.00	q41.00	q41.00
GORDON																								
	Regular Tubes	3.35	3.50	4.05	4.00	4.50	4.60	5.55	5.80	5.90	6.00	6.15	6.30	6.45	6.60	6.75	6.90	7.05	7.20	7.35	7.50	7.65	7.80	8.00
	Heavy Tourist Tubes	4.35	4.50	5.05	5.00	5.50	5.60	6.55	6.80	6.90	7.00	7.15	7.30	7.45	7.60	7.75	7.90	8.05	8.20	8.35	8.50	8.65	8.80	9.00
GREEN BAY PEERLESS																								
	Lotation Tread	s20.90	s21.40	s23.80	q26.40	q27.90	q29.15	q33.00	q36.05	q37.00	q38.05	q41.50	q42.75	q43.50	q49.50	q50.10	q51.95	q52.85	q53.90	q56.30	q58.25	q67.25	q66.95	q65.65
	Triangle Tread	q18.30	q21.40	q23.80	q26.40	q27.90	q29.15	q33.00	q36.05	q37.00	q38.05	q41.50	q42.75	q43.50	q49.50	q50.10	q51.95	q52.85	q53.90	q56.30	q58.25	q67.25	q66.95	q65.65
	Gray Tubes	3.40	3.55	4.05	4.30	4.45	4.80	5.75	6.10	6.25	6.35	6.50	6.65	6.80	6.95	7.10	7.25	7.40	7.55	7.70	7.85	8.00	8.15	8.30
GRYPHON																								
	Non-Skid	15.60	15.00	19.25	20.70	22.85	27.10	29.95	30.65	31.90	32.80	37.10	34.75	35.35	43.80	42.45	44.10	45.75	46.65	48.35	52.55	59.40	55.60	55.60
	Red Tubes	3.70	3.55	4.00	4.45	4.80	4.80	5.80	5.90	6.15	6.40	6.55	6.65	6.75	7.00	7.25	7.50	7.75	7.90	8.15	9.35	9.65	9.45	
	Gray Tubes	3.25	3.20	3.70	4.05	4.15	4.80	5.00	5.10	5.25	5.45	6.00	5.70	6.85	6.85	6.60	6.75	6.90	7.05	7.35	8.40	8.95	8.60	8.60
HAMILTON																								
	Heavy Red Antimony Tube	3.95	4.05	4.85	4.90	5.05	5.35	6.30	6.40	6.50	6.80	7.00	7.15	7.90	8.00	8.10	8.30	8.55	8.70	9.60	9.85	10.00	10.85	12.00
HARDMAN SENIOR																								
	Non-Skid	s20.75	s23.50	s28.00	s31.00	s33.10	37.25	s40.00	37.10	39.10	40.40	41.85	43.90	s47.75	56.05	58.20	60.35	62.50	64.25	63.10	s65.25	s67.00	s68.35	s69.50
	Red Tubes	3.95	3.95	4.35	5.00	5.25	5.85	6.30	6.50	6.75	6.95	7.30	7.40	7.55	7.70	7.85	8.00	8.15	8.30	8.45	8.60	8.75	8.90	9.05
HARTFORD V.																								
	Non-Skid	s15.50	s16.75	s22.00	s21.50	s22.85	26.00	s27.75	29.50	31.40	32.45	34.90	36.50	s42.35	43.45	45.10	46.20	48.25	50.00	54.20	s56.00	s58.00	s59.50	s60.50
	Gray Tubes	3.75	3.75	4.30	4.40	4.50	4.85	5.75	5.85	6.05	6.20	6.40	6.45	7.00	7.10	7.25	7.40	7.55	7.70	8.20	9.35	9.50	9.60	9.70
HAWKEYE																								
	Non-Skid	16.50	17.50	19.75	23.25	23.25	26.00	30.65	31.50	33.00	34.00	37.80	38.35	40.25	41.00	42.00	43.25	44.45	46.50	50.00	55.50	58.00	59.50	60.50
	Gray Tubes	3.15	3.30	4.15	4.25	4.40	4.75	5.35	5.50	5.65	5.75	6.00	6.20	6.75	6.85	7.00	7.15	7.30	7.45	7.60	7.75	7.90	8.05	8.20
HENDRIE																								
	Non-Skid	14.85	15.85	18.55	21.75	23.95	28.90	31.55	32.20	34.40	35.25	36.20	36.80	43.55	44.50	45.95	46.60	48.15	50.75	56.65	58.30	59.95	61.60	63.25
	Gray Tube	2.95	3.15	3.40	3.85	4.15	4.30	5.15	5.40	5.50	5.70	5.95	6.80	7.00	7.10	7.20	7.30	7.40	7.50	7.60	7.70	7.80	7.90	8.00

NOTE—The letter *c* means that a CLINCHER tire is NOT made in this size; *q* that a QUICK DETACHABLE is not made in this size, and *s* that a STRAIGHT SIDE is not made in this size.

## TIRES AND TUBES—Continued

Name	Trade Name and Tread	28x3	30x3	32x3	30x3 1/2	31x3 1/2	32x3 1/2	34x3 1/2	31x4	32x4	33x4	34x4	35x4	36x4	32x4 1/2	33x4 1/2	34x4 1/2	35x4 1/2	36x4 1/2	37x4 1/2	35x5	36x5	37x5	37x5 1/2	38x5 1/2
HEWITT	Ribbed Non-Skid Gray Tubes	qs18.00	qs19.15	qs20.15	qs20.55	qs21.15	qs21.55	qs22.15	qs22.55	qs23.15	qs23.55	qs24.15	qs24.55	qs25.15	qs25.55	qs26.15	qs26.55	qs27.15	qs27.55	qs28.15	qs28.55	qs29.15	qs29.55	qs30.15	qs30.55
	Gray Tubes	qs18.85	qs19.85	qs20.85	qs21.25	qs21.85	qs22.25	qs22.85	qs23.25	qs23.85	qs24.25	qs24.85	qs25.25	qs25.85	qs26.25	qs26.85	qs27.25	qs27.85	qs28.25	qs28.85	qs29.25	qs29.85	qs30.25	qs30.85	qs31.45
	Red Tubes	qs19.35	qs20.35	qs21.35	qs21.75	qs22.35	qs22.75	qs23.35	qs23.75	qs24.35	qs24.75	qs25.35	qs25.75	qs26.35	qs26.75	qs27.35	qs27.75	qs28.35	qs28.75	qs29.35	qs29.75	qs30.35	qs30.75	qs31.35	qs31.75
HIGHWAY	Plain Non-Skid Gray Tubes	qs16.35	qs17.35	qs18.35	qs18.75	qs19.35	qs19.75	qs20.35	qs20.75	qs21.35	qs21.75	qs22.35	qs22.75	qs23.35	qs23.75	qs24.35	qs24.75	qs25.35	qs25.75	qs26.35	qs26.75	qs27.35	qs27.75	qs28.35	qs28.75
	Gray Tubes	qs16.85	qs17.85	qs18.85	qs19.25	qs19.85	qs20.25	qs20.85	qs21.25	qs21.85	qs22.25	qs22.85	qs23.25	qs23.85	qs24.25	qs24.85	qs25.25	qs25.85	qs26.25	qs26.85	qs27.25	qs27.85	qs28.25	qs28.85	qs29.45
	Red Tubes	qs17.35	qs18.35	qs19.35	qs19.75	qs20.35	qs20.75	qs21.35	qs21.75	qs22.35	qs22.75	qs23.35	qs23.75	qs24.35	qs24.75	qs25.35	qs25.75	qs26.35	qs26.75	qs27.35	qs27.75	qs28.35	qs28.75	qs29.35	qs29.75
HOOD	Plain Non-Skid Gray Tubes	qs20.30	qs21.30	qs22.30	qs22.70	qs23.30	qs23.70	qs24.30	qs24.70	qs25.30	qs25.70	qs26.30	qs26.70	qs27.30	qs27.70	qs28.30	qs28.70	qs29.30	qs29.70	qs30.30	qs30.70	qs31.30	qs31.70	qs32.30	qs32.70
	Gray Tubes	qs20.80	qs21.80	qs22.80	qs23.20	qs23.80	qs24.20	qs24.80	qs25.20	qs25.80	qs26.20	qs26.80	qs27.20	qs27.80	qs28.20	qs28.80	qs29.20	qs29.80	qs30.20	qs30.80	qs31.20	qs31.80	qs32.20	qs32.80	qs33.40
	Red Tubes	qs21.30	qs22.30	qs23.30	qs23.70	qs24.30	qs24.70	qs25.30	qs25.70	qs26.30	qs26.70	qs27.30	qs27.70	qs28.30	qs28.70	qs29.30	qs29.70	qs30.30	qs30.70	qs31.30	qs31.70	qs32.30	qs32.70	qs33.30	qs33.70
HOWE	Ribbed Tread Non-Skid Gray Tubes	qs21.90	qs22.90	qs23.90	qs24.30	qs24.90	qs25.30	qs25.90	qs26.30	qs26.90	qs27.30	qs27.90	qs28.30	qs28.90	qs29.30	qs29.90	qs30.30	qs30.90	qs31.30	qs31.90	qs32.30	qs32.90	qs33.30	qs33.90	qs34.50
	Gray Tubes	qs22.40	qs23.40	qs24.40	qs24.80	qs25.40	qs25.80	qs26.40	qs26.80	qs27.40	qs27.80	qs28.40	qs28.80	qs29.40	qs29.80	qs30.40	qs30.80	qs31.40	qs31.80	qs32.40	qs32.80	qs33.40	qs33.80	qs34.40	qs35.00
	Red Tubes	qs22.90	qs23.90	qs24.90	qs25.30	qs25.90	qs26.30	qs26.90	qs27.30	qs27.90	qs28.30	qs28.90	qs29.30	qs29.90	qs30.30	qs30.90	qs31.30	qs31.90	qs32.30	qs32.90	qs33.30	qs33.90	qs34.30	qs34.90	qs35.50
INDIANA	Plain Non-Skid Gray Tubes	qs14.85	qs15.85	qs16.85	qs17.25	qs17.85	qs18.25	qs18.85	qs19.25	qs19.85	qs20.25	qs20.85	qs21.25	qs21.85	qs22.25	qs22.85	qs23.25	qs23.85	qs24.25	qs24.85	qs25.25	qs25.85	qs26.25	qs26.85	qs27.45
	Gray Tubes	qs15.35	qs16.35	qs17.35	qs17.75	qs18.35	qs18.75	qs19.35	qs19.75	qs20.35	qs20.75	qs21.35	qs21.75	qs22.35	qs22.75	qs23.35	qs23.75	qs24.35	qs24.75	qs25.35	qs25.75	qs26.35	qs26.75	qs27.35	qs27.75
	Red Tubes	qs15.85	qs16.85	qs17.85	qs18.25	qs18.85	qs19.25	qs19.85	qs20.25	qs20.85	qs21.25	qs21.85	qs22.25	qs22.85	qs23.25	qs23.85	qs24.25	qs24.85	qs25.25	qs25.85	qs26.25	qs26.85	qs27.25	qs27.85	qs28.45
KELLY-SPRINGFIELD	Driving Tread Non-Skid Gray Tubes	qs29.50	qs30.50	qs31.50	qs31.90	qs32.50	qs32.90	qs33.50	qs33.90	qs34.50	qs34.90	qs35.50	qs35.90	qs36.50	qs36.90	qs37.50	qs37.90	qs38.50	qs38.90	qs39.50	qs39.90	qs40.50	qs40.90	qs41.50	qs41.90
	Gray Tubes	qs30.00	qs31.00	qs32.00	qs32.40	qs33.00	qs33.40	qs34.00	qs34.40	qs35.00	qs35.40	qs36.00	qs36.40	qs37.00	qs37.40	qs38.00	qs38.40	qs39.00	qs39.40	qs40.00	qs40.40	qs41.00	qs41.40	qs42.00	qs42.60
	Red Tubes	qs30.50	qs31.50	qs32.50	qs32.90	qs33.50	qs33.90	qs34.50	qs34.90	qs35.50	qs35.90	qs36.50	qs36.90	qs37.50	qs37.90	qs38.50	qs38.90	qs39.50	qs39.90	qs40.50	qs40.90	qs41.50	qs41.90	qs42.50	qs43.10
KNIGHT	Blackstone Non-Skid Knight Ribbed Blackstone Tubes	qs17.45	qs18.45	qs19.45	qs19.85	qs20.45	qs20.85	qs21.45	qs21.85	qs22.45	qs22.85	qs23.45	qs23.85	qs24.45	qs24.85	qs25.45	qs25.85	qs26.45	qs26.85	qs27.45	qs27.85	qs28.45	qs28.85	qs29.45	qs29.85
	Gray Tubes	qs17.95	qs18.95	qs19.95	qs20.35	qs20.95	qs21.55	qs21.95	qs22.55	qs22.95	qs23.55	qs23.95	qs24.55	qs24.95	qs25.55	qs25.95	qs26.55	qs26.95	qs27.55	qs27.95	qs28.55	qs28.95	qs29.55	qs29.95	qs30.55
	Red Tubes	qs18.45	qs19.45	qs20.45	qs20.85	qs21.45	qs21.85	qs22.45	qs22.85	qs23.45	qs23.85	qs24.45	qs24.85	qs25.45	qs25.85	qs26.45	qs26.85	qs27.45	qs27.85	qs28.45	qs28.85	qs29.45	qs29.85	qs30.45	qs30.85
KOKOMO	Gridiron Non-Skid Standard Gray Tubes	qs17.85	qs18.85	qs19.85	qs20.25	qs20.85	qs21.45	qs21.85	qs22.45	qs22.85	qs23.45	qs23.85	qs24.45	qs24.85	qs25.45	qs25.85	qs26.45	qs26.85	qs27.45	qs27.85	qs28.45	qs28.85	qs29.45	qs29.85	qs30.45
	Gray Tubes	qs18.35	qs19.35	qs20.35	qs20.75	qs21.35	qs21.75	qs22.35	qs22.75	qs23.35	qs23.75	qs24.35	qs24.75	qs25.35	qs25.75	qs26.35	qs26.75	qs27.35	qs27.75	qs28.35	qs28.75	qs29.35	qs29.75	qs30.35	qs30.75
	Red Tubes	qs18.85	qs19.85	qs20.85	qs21.25	qs21.85	qs22.45	qs22.85	qs23.45	qs23.85	qs24.45	qs24.85	qs25.45	qs25.85	qs26.45	qs26.85	qs27.45	qs27.85	qs28.45	qs28.85	qs29.45	qs29.85	qs30.45	qs30.85	qs31.45
LANCASTER	Clingstone White Plain or Non-Skid Clingstone Tubes	qs17.50	qs18.50	qs19.50	qs20.00	qs20.60	qs21.20	qs21.80	qs22.40	qs23.00	qs23.60	qs24.20	qs24.80	qs25.40	qs26.00	qs26.60	qs27.20	qs27.80	qs28.40	qs29.00	qs29.60	qs30.20	qs30.80	qs31.40	qs31.80
	Gray Tubes	qs18.00	qs19.00	qs20.00	qs20.40	qs21.00	qs21.60	qs22.20	qs22.80	qs23.40	qs24.00	qs24.60	qs25.20	qs25.80	qs26.40	qs27.00	qs27.60	qs28.20	qs28.80	qs29.40	qs30.00	qs30.60	qs31.20	qs31.80	qs32.40
	Red Tubes	qs18.50	qs19.50	qs20.50	qs20.90	qs21.50	qs22.10	qs22.70	qs23.30	qs23.90	qs24.50	qs25.10	qs25.70	qs26.30	qs26.90	qs27.50	qs28.10	qs28.70	qs29.30	qs29.90	qs30.50	qs31.10	qs31.70	qs32.30	qs32.90
LEE	Standard Ribbed Standard Non-Skid Puncture Proof Plain	qs16.50	qs17.50	qs18.50	qs18.90	qs19.50	qs19.90	qs20.50	qs20.90	qs21.50	qs21.90	qs22.50	qs22.90	qs23.50	qs23.90	qs24.50	qs24.90	qs25.50	qs25.90	qs26.50	qs26.90	qs27.50	qs27.90	qs28.50	qs28.90
	Gray Tubes	qs17.00	qs18.00	qs19.00	qs19.40	qs20.00	qs20.40	qs21.00	qs21.40	qs22.00	qs22.40	qs23.00	qs23.40	qs24.00	qs24.40	qs25.00	qs25.40	qs26.00	qs26.40	qs27.00	qs27.40	qs28.00	qs28.40	qs29.00	qs29.40
	Red Tubes	qs17.50	qs18.50	qs19.50	qs19.90	qs20.50	qs20.90	qs21.50	qs21.90	qs22.50	qs22.90	qs23.50	qs23.90	qs24.50	qs24.90	qs25.50	qs25.90	qs26.50	qs26.90	qs27.50	qs27.90	qs28.50	qs28.90	qs29.50	qs29.90
LIBERTY	5 000-Mile Plain 5 000-Mile Non-Skid Gray Tubes	qs19.50	qs20.50	qs21.50	qs21.90	qs22.50	qs22.90	qs23.50	qs23.90	qs24.50	qs24.90	qs25.50	qs25.90	qs26.50	qs26.90	qs27.50	qs27.90	qs28.50	qs28.90	qs29.50	qs29.90	qs30.50	qs30.90	qs31.50	qs31.90
	Gray Tubes	qs20.00	qs21.00	qs22.00	qs22.40	qs23.00	qs23.40	qs24.00	qs24.40	qs25.00	qs25.40	qs26.00	qs26.40	qs27.00	qs27.40	qs28.00	qs28.40	qs29.00	qs29.40	qs30.00	qs30.40	qs31.00	qs31.40	qs32.00	qs32.40
	Red Tubes	qs20.50	qs21.50	qs22.50	qs22.90	qs23.50	qs23.90	qs24.50	qs24.90	qs25.50	qs25.90	qs26.50	qs26.90	qs27.50	qs27.90	qs28.50	qs28.90	qs29.50	qs29.90	qs30.50	qs30.90	qs31.50	qs31.90	qs32.50	qs32.90
McCREARY	Plain Tread Non-Skid Gray Tubes	qs17.50	qs18.50	qs19.50	qs20.00	qs20.60	qs21.20	qs21.80	qs22.40	qs23.00	qs23.60	qs24.20	qs24.80	qs25.40	qs26.00	qs26.60	qs2								



[illegible]

NOTE—The letter c means that a CLINCHER tire is NOT made in this size; q that a QUICK-DETACHABLE is not made in this size, and s that a STRAIGHT SIDE is not made in this size.

## TIRES AND TUBES—Continued

Name	Trade Name and Tread	28x3	30x3	32x3	30x3 1/2	31x3 1/2	32x3 1/2	34x3 1/2	31x4	32x4	33x4	34x4	35x4	36x4	32x4 1/2	33x4 1/2	34x4 1/2	35x4 1/2	36x4 1/2	37x4 1/2	35x5	36x5	37x5	37x5 1/2	38x5 1/2
QUAKER	T.T.T. Non-Skid Gray Tubes Red Tubes	s18.40	s19.45	s20.95	24.25	s25.40	28.95	31.15	s26.30	38.75	38.35	38.95	e40.70	41.30	qs42.75		52.55	e54.85	55.60	e57.95	e62.60	63.20	e65.75	e67.45	es85.70
		s20.70	s22.45	s24.35	28.20	s29.30	33.45	36.35	s32.10	42.85	44.55	45.45	e47.35	48.05	qs49.70		58.30	e60.60	61.25	e63.45	e68.90	69.75	e72.45	e74.25	es98.10
RACINE	Country Road Ribbed Cord Non-Skid Cord Gray Tubes Red Tubes	qs15.60	qs16.70	qs20.55	qs21.75	qs23.95	25.95	q31.55	q36.30	32.20	34.40	35.25	36.80	36.80	e43.55		45.95	e46.90	47.15	50.75	56.65	58.30	59.95		
		qs18.20	qs19.55	qs23.70	qs24.85	28.05	qs33.70	q38.35	q43.60	q48.35	38.35	40.50	41.10	41.85	e48.25		50.95	e51.90	52.15	56.60	68.20	69.85	71.50		
RACINE HORSESHOE	Plain Non-Skid Cord Non-Skid Gray Tubes Red Tubes	qs17.00	qs18.50	qs21.00	qs22.00	24.00	25.00	qs35.00	qs40.00	31.50	32.00	32.50	35.00	36.00	qs44.00		45.00	e46.00	47.00	50.00	53.00	54.00	55.00	es78.00	
		qs18.00	qs19.50	qs23.50	qs24.50	27.00	qs36.00	q41.00	q46.00	q51.00	36.00	37.00	38.00	40.00	42.00	qs48.50		51.00	e52.00	53.00	57.50	64.50	66.00	67.50	es85.00
RECORD	Non-Skid Red Tubes Gray Tubes	qs15.75	qs17.75	qs20.20	qs21.25	qs23.00	24.75	q31.35	q36.10	33.20	33.45	e34.35	36.85	37.00	qs47.00		48.05	e49.05	50.05	53.05	59.80	61.70	63.65	65.60	
		qs18.35	qs20.35	qs22.80	qs23.85	26.05	qs37.00	q41.75	q46.50	q51.25	37.00	38.00	39.00	41.00	43.00	qs49.50		50.50	e51.50	52.50	56.00	63.00	64.95	66.90	es86.05
REPUBLIC	Ribbed Tread Staggard Non-Skid Gray Tubes Blackline Red Tubes	qs15.55	qs16.70	qs21.25	qs22.30	qs24.00	25.75	q32.10	q36.85	33.75	35.45	36.25	37.90	38.50	45.15		46.55	e47.55	48.15	53.20	59.00	59.80	62.55	e66.55	
		qs18.25	qs19.45	qs23.75	qs24.80	27.05	qs38.00	q42.75	q47.50	q52.25	38.00	39.00	40.00	42.00	44.00	qs50.00		51.00	e52.00	53.00	56.50	63.50	65.45	68.20	s101.75
REVERE	"R" Anti-Skid Granite Tread Cord Casings Gray Tubes Red Tubes	14.00	15.20	19.75	20.75	22.90	28.30	s33.10	38.20	30.85	32.25	33.05	37.80	38.35	qs48.00		49.45	e50.45	51.05	55.05	61.85	58.75	56.20	58.15	es75.60
		14.70	18.05	23.50	24.70	27.00	32.40	37.50	42.60	47.70	32.40	33.90	34.65	39.65	40.25	qs50.50		51.50	e52.50	53.15	57.15	64.15	61.70	63.65	es85.40
SAVAGE	Plain Non-Skid Gray Tubes Red Tubes	qs14.85	qs15.05	qs19.15	qs20.60	22.40	25.40	qs29.85	30.50	41.95	32.75	34.25	34.25	34.75	qs47.00		42.05	e43.40	44.15	e48.10	e53.30	e54.15	e56.50	e58.10	es75.60
		qs17.35	qs17.65	qs22.40	qs24.15	26.20	qs34.95	q39.70	q44.45	q49.15	35.70	37.50	38.25	40.00	40.65	qs49.50		49.25	e50.80	51.55	55.55	62.55	64.10	66.10	es85.40
SCHAVOIR	Gray Tubes Red Tubes	3.35	3.40	3.65	4.10	4.15	4.20	4.40	5.20	5.30	5.50	5.65	5.85	6.05	6.65		6.85	e7.05	7.30	7.55	8.55	8.80	9.00	9.25	10.35
		3.40	3.65	3.95	4.40	4.45	4.70	5.00	5.80	5.90	6.05	6.25	6.50	6.70	7.25	7.45	7.65	e7.85	8.10	8.35	9.35	9.55	9.80	10.25	11.10
SEMPLE	Semco Red Tubes	3.60	3.75	3.75	4.50	4.60	4.75	5.05	6.05	6.20	6.40	6.60	6.75	6.95	7.95		8.20	e8.35	8.60	8.9	9.85	10.05	10.35	11.00	11.30
		qs14.75	qs15.70	q19.95	qs21.30	23.25	qs27.05	qs31.70	qs36.40	qs41.10	33.25	34.50	35.05	36.00	36.55	qs47.00		48.10	e49.10	51.70	q60.00	e62.05	e64.05	e66.05	es85.40
SOUTHERN	S Non-Skid Red Tubes	qs17.50	qs17.50	q26.00	q26.00	26.25	qs26.25	qs31.00	qs35.75	33.80	35.80	37.85	39.90	40.40	qs49.50		50.50	e51.50	53.10	e56.00	q62.80	e64.80	e66.80	e68.80	es90.00
		3.80	4.05	4.65	4.75	4.85	5.05	6.40	6.60	6.80	6.80	6.90	7.10	7.30	8.30	8.30	8.50	e8.70	9.00	9.00	10.05	10.20	10.40	10.60	es103.25
SPEEDWAY	Non-Skid Red Tubes	qs18.66	qs18.66	qs23.33	qs23.33	23.60	qs23.60	qs28.33	qs33.00	33.40	37.80	39.20	40.60	41.00	qs42.00		43.33	e44.66	46.00	q50.33	q68.60	q70.00	q71.33	q72.66	es103.25
		4.33	4.46	5.66	6.00	6.33	6.66	7.33	7.66	8.00	8.33	8.66	9.00	9.33	10.00	10.33	10.66	e10.99	11.33	12.00	q70.00	q72.00	q74.00	q76.00	es103.25
STANDARD FOUR	Super Tread Non-Skid Gray Tubes Red Tubes	15.50	16.15	20.55	22.50	24.30	25.95	32.00	32.60	32.60	34.50	35.05	36.00	36.55	qs46.00		48.00	e49.00	50.55	52.60	58.50	61.05	63.60	66.15	es103.25
		16.60	17.25	22.00	23.95	25.75	27.60	34.70	35.30	35.30	37.20	37.95	38.50	39.05	40.00	qs47.00		49.00	e50.00	51.55	53.60	59.40	61.95	64.50	es103.25
STAR	Ribbed Tread All Star Non-Skid Gray Tubes	qs23.40	qs23.40	qs28.70	qs30.05	32.75	34.50	q41.50	q42.75	34.40	35.00	35.65	36.30	36.95	qs48.00		49.00	e50.00	51.55	53.60	59.40	61.95	64.50	67.05	es103.25
		4.15	4.30	5.20	5.40	5.60	5.85	6.55	6.70	6.85	7.10	7.30	7.50	7.70	8.35	8.35	8.60	e8.80	9.10	9.30	10.40	10.60	10.80	11.00	es103.25
STERLING	Sterling Vacuum-Bar Non-Skid Sterling Seamless Red Tubes	qs18.33	qs21.84	qs28.00	qs29.74	31.30	33.00	36.50	38.20	45.82	e47.26	e48.88		e51.93	es61.10		e64.16	e65.69	e67.22	e68.75	e76.37	e77.91	e80.96	e85.53	es88.60
		4.08	4.37	4.71	5.94	6.23	6.66	7.12	7.25	7.72	7.85	7.95	8.15	8.35	8.12	8.92	9.24	9.52	9.78	10.04	11.51	11.77	11.98	13.71	14.11
STRONGHOLD	Plain Non-Skid Gray Tubes Red Tubes	19.25	21.10	27.00	29.90	31.00	33.85	34.55	37.15	37.15	38.65	40.75	42.85	42.10	qs50.60		52.60	e53.60	55.10	57.10	68.60	70.90	73.20	75.50	es85.40
		3.65	4.50	4.20	4.40	4.60	4.85	5.75	6.10	6.30	6.50	6.70	6.90	7.10	7.30	7.50	7.70	7.90	8.10	8.30	9.10	9.30	9.50	9.70	es85.40
SWINEHART	Plain Ribbed Non-Skid Tubes	qs17.00	qs18.50	qs22.50	qs23.95	25.75	28.75	qs32.80	qs36.65	33.55	35.20	35.95	37.65	38.20	qs44.75		46.25	e47.75	49.25	50.75	e59.00	e60.25	e61.50	e62.75	es81.00
		qs19.25	qs20.50	qs24.75	qs26.70	32.55	qs35.30	q40.05	q44.75	q49.45	39.25	40.90	41.65	43.35	43.90	qs50.60		52.10	e53.60	55.10	57.10	68.60	70.90	73.20	es81.00
TEN BROECK	Plain Non-Skid Gray Tubes Ribbed	3.25	3.35	3.70	3.90	4.10	4.15	4.35	5.15	5.35	5.50	5.60	5.75	5.85	qs52.50		54.00	e55.50	57.00	59.00	e68.50	e69.75	e71.00	e72.25	es100.00
		qs15.30	qs16.35	qs21.45	qs22.45	24.50	27.50	qs32.55	qs36.40	33.40	35.05	35.80	37.45	38.00	qs44.00		46.00	e47.00	48.50	50.50	e59.00	e60.25	e61.50	e62.75	es100.00
CORD RIBBED TREAD	Plain Non-Skid Gray Tubes Ribbed	qs15.30	qs16.35	qs21.45	qs22.45	24.50	27.50	qs32.55	qs36.40	33.40	35.05	35.80	37.45	38.00	qs44.00		46.00	e47.00	48.50	50.50	e59.00	e60.25	e61.50	e62.75	es100.00
		3.65	3.80	4.00	4.25	4.45	4.55	4.75	5.95	6.15	6.30	6.45	6.60	6.75	7.85		8.05	e8.20	8.35	8.55	9.80	9.95	10.20	10.90	
CORD NON-SKID	Plain Non-Skid Gray Tubes Ribbed	qs19.65	qs20.10	qs26.00	qs27.50	30.50	33.00	qs39.00	qs43.00	40.70	42.50	43.75	45.75	46.75	qs53.00		54.75	e56.50	58.25	60.00	e69.00	e70.25	e71.50	e72.75	es100.65
		qs22.15	qs21.60	qs27.55	qs29.00																				



Name	Trade Name and Tread	28x3	30x3	32x3	30x3 1/2	31x3 1/2	32x3 1/2	34x3 1/2	31x4	32x4	33x4	34x4	35x4	36x4	32x4 1/2	33x4 1/2	34x4 1/2	35x4 1/2	36x4 1/2	37x4 1/2	35x5	36x5	37x5	38x5 1/2
THERMOID	Non-Skid and Ribbed Tread	qs24.70	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85	qs24.85
	Brown and Deluxe Red Tubes	q3.80	q3.85	q3.85	q3.85	q3.85	q3.85	q3.85	q3.85	q3.85	q3.85	q3.85	q3.85	q3.85	q3.85	q3.85	q3.85	q3.85	q3.85	q3.85	q3.85	q3.85	q3.85	q3.85
	6000 Mile Plain	21.54	22.32	28.32	27.54	30.72	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70
	6000 Non-Skid	23.52	24.66	31.50	30.72	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70
TOLIVER	Puncture-proof Inner Tubes	3.72	3.66	4.08	4.50	4.56	4.62	4.68	4.74	4.80	4.86	4.92	4.98	5.04	5.10	5.16	5.22	5.28	5.34	5.40	5.46	5.52	5.58	5.64
	Gray Tubes	4.85	4.80	5.00	5.90	6.00	6.05	6.10	6.15	6.20	6.25	6.30	6.35	6.40	6.45	6.50	6.55	6.60	6.65	6.70	6.75	6.80	6.85	6.90
	Extra Heavy Tubes	14.00	15.20	17.60	20.75	21.80	22.00	22.20	22.40	22.60	22.80	23.00	23.20	23.40	23.60	23.80	24.00	24.20	24.40	24.60	24.80	25.00	25.20	25.40
	Holdite Non-Skid	14.00	15.20	17.60	20.75	21.80	22.00	22.20	22.40	22.60	22.80	23.00	23.20	23.40	23.60	23.80	24.00	24.20	24.40	24.60	24.80	25.00	25.20	25.40
TYRIAN	Holdite Non-Skid	14.00	15.20	17.60	20.75	21.80	22.00	22.20	22.40	22.60	22.80	23.00	23.20	23.40	23.60	23.80	24.00	24.20	24.40	24.60	24.80	25.00	25.20	25.40
	Extra Heavy Tubes	14.00	15.20	17.60	20.75	21.80	22.00	22.20	22.40	22.60	22.80	23.00	23.20	23.40	23.60	23.80	24.00	24.20	24.40	24.60	24.80	25.00	25.20	25.40
	Urethane Non-Skid	14.00	15.20	17.60	20.75	21.80	22.00	22.20	22.40	22.60	22.80	23.00	23.20	23.40	23.60	23.80	24.00	24.20	24.40	24.60	24.80	25.00	25.20	25.40
	Chain Non-Skid	14.00	15.20	17.60	20.75	21.80	22.00	22.20	22.40	22.60	22.80	23.00	23.20	23.40	23.60	23.80	24.00	24.20	24.40	24.60	24.80	25.00	25.20	25.40
UNITED STATES	Nobby Non-Skid	14.00	15.20	17.60	20.75	21.80	22.00	22.20	22.40	22.60	22.80	23.00	23.20	23.40	23.60	23.80	24.00	24.20	24.40	24.60	24.80	25.00	25.20	25.40
	Royal Cord Non-Skid	14.00	15.20	17.60	20.75	21.80	22.00	22.20	22.40	22.60	22.80	23.00	23.20	23.40	23.60	23.80	24.00	24.20	24.40	24.60	24.80	25.00	25.20	25.40
	Gray Tubes	3.15	3.30	3.45	4.25	4.30	4.35	4.40	4.45	4.50	4.55	4.60	4.65	4.70	4.75	4.80	4.85	4.90	4.95	5.00	5.05	5.10	5.15	5.20
	Red Tubes	4.00	4.10	4.40	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30
VICTOR	Plain	18.80	19.85	24.45	28.45	29.90	31.75	33.60	35.45	37.30	39.15	41.00	42.85	44.70	46.55	48.40	50.25	52.10	53.95	55.80	57.65	59.50	61.35	63.20
	Ribbed	20.80	21.85	26.45	30.45	31.90	33.75	35.60	37.45	39.30	41.15	43.00	44.85	46.70	48.55	50.40	52.25	54.10	55.95	57.80	59.65	61.50	63.35	65.20
	Non-Skid	21.00	22.30	27.65	31.65	33.10	34.95	36.80	38.65	40.50	42.35	44.20	46.05	47.90	49.75	51.60	53.45	55.30	57.15	59.00	60.85	62.70	64.55	66.40
	Victor Gray Tubes	3.40	3.65	4.25	4.55	4.70	4.85	5.00	5.15	5.30	5.45	5.60	5.75	5.90	6.05	6.20	6.35	6.50	6.65	6.80	6.95	7.10	7.25	7.40
VIKING	Victor Red Tubes	3.75	3.95	4.65	5.30	5.30	5.40	5.50	5.60	5.70	5.80	5.90	6.00	6.10	6.20	6.30	6.40	6.50	6.60	6.70	6.80	6.90	7.00	7.10
	Springfield Pure Gum Tubes	3.85	3.95	4.65	5.30	5.30	5.40	5.50	5.60	5.70	5.80	5.90	6.00	6.10	6.20	6.30	6.40	6.50	6.60	6.70	6.80	6.90	7.00	7.10
	Springfield Red Tubes	4.00	4.10	4.80	5.50	5.50	5.60	5.70	5.80	5.90	6.00	6.10	6.20	6.30	6.40	6.50	6.60	6.70	6.80	6.90	7.00	7.10	7.20	7.30
	Hold-On Tread	21.90	22.50	27.65	31.65	33.10	34.95	36.80	38.65	40.50	42.35	44.20	46.05	47.90	49.75	51.60	53.45	55.30	57.15	59.00	60.85	62.70	64.55	66.40
VITALIC	Plain	16.25	17.05	21.10	25.10	26.55	28.40	30.25	32.10	33.95	35.80	37.65	39.50	41.35	43.20	45.05	46.90	48.75	50.60	52.45	54.30	56.15	58.00	59.85
	Non-Skid	17.05	17.85	21.90	25.90	27.35	29.20	31.05	32.90	34.75	36.60	38.45	40.30	42.15	44.00	45.85	47.70	49.55	51.40	53.25	55.10	56.95	58.80	60.65
	Red and Gray Tubes	4.15	4.25	4.40	5.05	5.05	5.15	5.25	5.35	5.45	5.55	5.65	5.75	5.85	5.95	6.05	6.15	6.25	6.35	6.45	6.55	6.65	6.75	6.85
	Extra Heavy Gray Tubes	4.70	4.80	5.05	5.65	5.65	5.75	5.85	5.95	6.05	6.15	6.25	6.35	6.45	6.55	6.65	6.75	6.85	6.95	7.05	7.15	7.25	7.35	7.45
VULCAN	Gray Tubes	3.30	3.35	3.50	4.15	4.15	4.25	4.35	4.45	4.55	4.65	4.75	4.85	4.95	5.05	5.15	5.25	5.35	5.45	5.55	5.65	5.75	5.85	5.95
	Indian Red Tubes	3.65	3.70	3.85	4.50	4.50	4.60	4.70	4.80	4.90	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	6.00	6.10	6.20	6.30
	Wearwell Plain	15.60	16.20	20.25	24.25	25.70	27.55	29.40	31.25	33.10	34.95	36.80	38.65	40.50	42.35	44.20	46.05	47.90	49.75	51.60	53.45	55.30	57.15	59.00
	Wearwell Non-Skid	16.20	16.80	20.85	24.85	26.30	28.15	30.00	31.85	33.70	35.55	37.40	39.25	41.10	42.95	44.80	46.65	48.50	50.35	52.20	54.05	55.90	57.75	59.60
WILSON	Wearwell Gray Tubes	3.50	3.45	3.60	4.20	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	6.00
	Wearwell Red Tubes	3.85	3.80	3.95	4.55	4.55	4.65	4.75	4.85	4.95	5.05	5.15	5.25	5.35	5.45	5.55	5.65	5.75	5.85	5.95	6.05	6.15	6.25	6.35
	Wilson Non-Skid	15.60	16.20	20.25	24.25	25.70	27.55	29.40	31.25	33.10	34.95	36.80	38.65	40.50	42.35	44.20	46.05	47.90	49.75	51.60	53.45	55.30	57.15	59.00
	Wearwell Plain	15.60	16.20	20.25	24.25	25.70	27.55	29.40	31.25	33.10	34.95	36.80	38.65	40.50	42.35	44.20	46.05	47.90	49.75	51.60	53.45	55.30	57.15	59.00
WOODWORTH	Plain	23.90	25.30	32.60	36.45	38.80	40.65	42.50	44.35	46.20	48.05	49.90	51.75	53.60	55.45	57.30	59.15	61.00	62.85	64.70	66.55	68.40	70.25	72.10
	Non-Skid	25.75	27.90	34.90	38.75	41.10	42.95	44.80	46.65	48.50	50.35	52.20	54.05	55.90	57.75	59.60	61.45	63.30	65.15	67.00	68.85	70.70	72.55	74.40
	Tubes	3.90	4.00	4.40	4.65	4.65	4.75	4.85	4.95	5.05	5.15	5.25	5.35	5.45	5.55	5.65	5.75	5.85	5.95	6.05	6.15	6.25	6.35	6.45
	Wearwell Non-Skid	23.90	25.30	32.60	36.45	38.80	40.65	42.50	44.35	46.20	48.05	49.90	51.75	53.60	55.45	57.30	59.15	61.00	62.85	64.70	66.55	68.40	70.25	72.10
ZEE-ZEE	"Z" White Tread Non-Skid	20.70	21.55	23.84	25.73	27.62	29.51	31.40	33.29	35.18	37.07	38.96	40.85	42.74	44.63	46.52	48.41	50.30	52.19	54.08	55.97	57.86	59.75	61.64
	Brazilian Tubes	4.52	4.52	5.18	5.30	5.42	5.54	5.66	5.78	5.90	6.02	6.14	6.26	6.38	6.50	6.62	6.74	6.86	6.98	7.10	7.22	7.34	7.46	7.58
	Climax Non-Skid	11.55	12.87	13.75	14.57	15.45	16.33	17.21	18.09	18.97	19.85	20.73	21.61	22.49	23.37	24.25	25.13	26.01	26.89	27.77	28.65	29.53	30.41	31.29
	Samson Tread Non-Skid	15.51	16.51	20.07	21.23	22.54	23.85	25.16	26.47	27.78	29.09	30.40	31.71	33.02	34.33	35.64	36.95	38.26	39.57	40.88	42.19	43.50	44.81	46.12

NOTE—The letter c means that a CLINCHER tire is NOT made in this size; q that a QUICK-DETACHABLE is not made in this size, and s that a STRAIGHT SIDE is not made in this size.

These Tables are for your constant consultation and should be of great value in the conduct of your business—

SAVE THEM

## Trucks

## Trucks

## MOTOR WORLD GUIDE

This table appears in the first issue every month. It is corrected every month and brought up to date.

Name and Model		Tons Capacity	TIRES		Price of Chassis		Wheelbase in Inches		MOTOR										TRANSMISSION										BRAKES																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
			Kind	Sizes in Ins.	Make Engine	No. of Crankshaft Bearings	Cylinders and Stroke	S. A. E. Hp.	Valves Placed	Spark Plug	IGNITION	Electric System—Type and Make	GOVERNOR		SPEED	FUEL SYS.		CLUTCH		GEARSET		Rear Axle	Springs, Make	Universals, Make	Final Drive	Propulsion Taken By	Torque Taken By	Hand Brake			Foot Brake	Steering Gear																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								



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## TRUCKS—Continued

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## TRUCKS—Continued

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# MOTOR WORLD

for  
DEALERS, JOBBERS AND GARAGEMEN

Volume LVI  
No. 7

PUBLISHED WEEKLY  
NEW YORK, AUGUST 14, 1918

Ten cents a copy  
Two dollars a year

## The Crisis Proves The Car

### In the Very Face of Curtailment Hudson Dealers find Reason for Self-Congratulation

Hudson dealers are feeling the curtailment in production keenly.

They're asking for more Super-Sixes every day than can possibly be delivered in a month.

It is costing them money not to get them.

And yet they're not whining.

They seem disposed to accept conditions much in the spirit of the French—shrug their shoulders and make the best of it—"C'est la guerre".

In fact, we believe there is not a Hudson dealer who is not congratulating himself more than before.

Why?

Because this crisis is proving again—more emphatically than ever—the calibre of the car he handles.

It almost seems as if Hudson en-

gineers built three years ago with the present crisis in mind.

The power and endurance they put into the Super-Six then and have refined and improved since is proving the Hudson essentially a war-time car.

Hudson quality is the quality that endures.

With the need for automobile transportation greater and the requirements more severe, Hudson Super-Sixes are "seeing their owners through."

Little wonder that it stimulates a man's pride to handle a car like the Super-Six.

These are the reasons why, in the face of curtailment, Hudson dealers find good reason for self-congratulation.

Hudson Motor Car Company



Detroit, Michigan



**V**ITAL wartime demands upon the facilities of our giant Kenosha factory permit us to supply only a limited number of Nash passenger cars and Nash trucks for necessary commercial purposes. Both these Nash products are proving so practical in this emergency that when the war is over and we are able to enlarge our dealer organization, the Nash passenger car and Nash truck selling franchises should prove exceptionally attractive.

#### *Nash Passenger Cars*

5-Pass. Touring Car	- -	\$1395
4-Pass. Roadster	- - -	1395
Sedan	- - - - -	2085
4-Passenger Coupe	- -	2085
7-Passenger Touring Car	-	1545

#### *Nash Trucks*

One Ton	Chassis	\$1595
Two Ton	Chassis	2075
Nash Quad	Chassis	3250

*Prices f. o. b. Kenosha*

#### **NASH TRUCK FEATURES**

*M. & S. automatic locking differential.  
Internal gear-drive rear axle.  
Electric lights and starter.  
Unusually long springs, and the Hotchkiss drive.  
Extra heavy frame and radiator construction*

**The Nash Motors Co., Kenosha, Wis.**

*Manufacturers of Passenger Cars and Trucks  
Including the Famous Nash Quad*

# **NASH MOTORS**

**VALUE CARS AT VOLUME PRICES**

# MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

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# "NORMA" PRECISION BALL BEARINGS

(PATENTED)



Measure the value of a machine in terms of service — not in dollars and cents. What is its earning power? Is it continuously profitable? How long will its earning power last? Check up the first cost by the answers to these questions. Thus only can the right conception of values be had.

"NORMA" Precision Bearings, the standard bearings in high-grade ignition apparatus and lighting generators, are important factors in maintaining the service qualities of the cars, trucks, tractors, power boats and airplanes on which they are used.

Be Sure—See That Your  
Electrical Apparatus Is  
"NORMA" Equipped

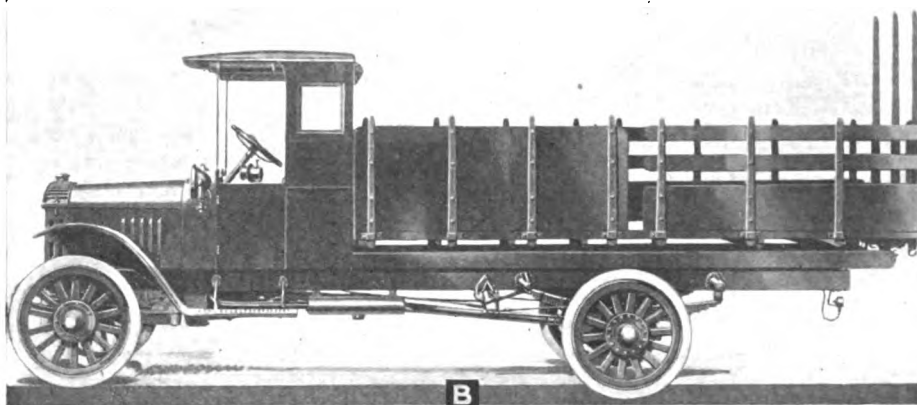


## THE NORMA COMPANY OF AMERICA

1790 BROADWAY

NEW YORK

Ball, Roller, Thrust and Combination Bearings



**What Bethlehem Motors Corporation  
say about Gray & Davis Starting-  
Lighting System for Motor Trucks**

**"The truck you buy today should be running six, seven, eight or nine years from now provided it is given intelligent care and attention. It therefore behooves the truck buyer to satisfy himself that the truck he buys contains all the modern features of the Bethlehem construction.**

## **GRAY & DAVIS**

### **STARTING - LIGHTING SYSTEM**

**is as much a part of the equipment on the modern motor truck as it is on the modern passenger car. The starting features alone insure a substantial economy in gasoline and oil consumption by eliminating the need for running the motor idle."**

**All Bethlehem trucks are equipped with the Gray & Davis double unit system, and Gray & Davis Quality Lamps especially constructed for truck use, making them serviceable for twenty-four hours a day.**

**GRAY & DAVIS., Inc., Boston, Mass.**

**(G)**



# MOTOR WORLD

for  
DEALERS, JOBBERS AND GARAGEMEN

Vol. LVI

New York, U. S. A., Wednesday, August 14, 1918

No. 7

## The Foundling



# Tractor Looms Big as 1918-19 Profit-Maker

Salina Demonstration Develops Selling Possibilities—Big Business  
Done at Demonstration—Farmers Keen as Buyers  
—Equipment a Factor

**S**ALINA, KAN., Aug. 3.—The most important result of the National Tractor Demonstration, which came to an end to-day, is the establishment of the tractor and of the equipment which goes with it as the greatest merchandising proposition in the farm operative equipment line.

The tractor has come into its own. It has arrived. And with it has come the opportunity which the liveliest bunch of retailers on earth, the motor car dealers, has been waiting for.

Secondary only in importance to the tractor itself as a merchandising proposition is the fact that the motor car interests of the country, from the engineering departments of some of the largest motor car companies in the world down to the most obscure and humblest of the sub-dealers in the outlying districts, are awake to the possibilities now opened.

## Demonstration Start of Tractor History

Real tractor history will date from the Salina demonstration. All that has gone before has been but preliminary. From the merchandising angle all previous demonstrations did not amount to very much. They were piking affairs compared to that which just has closed.

In the past the tractor manufacturer did not expect to do much business and in this respect his expectations were realized. If he were able to dispose of the machine he had on demonstration and make a few small agency contracts for a sample machine or so he was satisfied.

Few, if any, of the makers in the past had a production which war-

ranted their looking for anything more than this, and even if large contracts had been offered to them they hardly were in a position to accept them. Neither were they sure that their designs and models had reached such a state of permanency as to warrant them in taking chances on big orders. In turn there were doubt and hesitancy upon the part of buyers and there were few large sales organizations which had the courage to go into the tractor business on a large scale.

As far, at least, as business at a demonstration went, the events were very minor affairs.

## Big Business This Year

This year all was changed. The manufacturer was reasonably sure of his design and his production. The dealer was ready to buy, and the large distributor was here to make sales arrangements covering extensive territory and involving large numbers of machines and immense sums of money. Several distributor deals were closed at the Salina demonstration which exceed \$1,000,000. Manager A. E. Hildebrand is authority for the statement, based upon reports made to him in which he says he has every confidence that distributor sales were made at Salina which will aggregate in excess of \$25,000,000. The tractor business has grown out of the juvenile class.

## Motor Car Men on Hand

Equally significant was the attendance of a large number of motor car men, manufacturers, engineers, large distributors and dealers. It means something in motor car circles when several days are spent at the demonstrations by such men as E. H. Belden, chief engineer of the Willys-Overland Co., accompanied by H. E. Rhoades, who carries the significant title of Tractor Engineer in the same company; H. Palmer, of the engineering department of the Kissel; J. M. Bloch,

general manager of the Gibson Co., Indianapolis, controlling a territory as large as a state and with 130 dealers in the organization.

## Joe Bloch Wants a Lot

Indeed, J. M. Bloch, for instance, frankly admitted he was looking for a tractor, one which was of the right design for the needs of his territory and which was backed with a factory production large enough to take care of his organization of dealers. It is his intention, if he can make such a connection, to put every dealer in his organization into the tractor business this coming year. Maybe it will be no less interesting to know that the Kansas organization which will sell the tractor which was most numerous represented at the Salina show, the Fordson, also is a motor car organization.

## Motor Car Dealers in Lead

In this connection it is worth while also to note the admission made by J. P. Brilhart, the field organizer for the past 10 years for the Western Association of Retail Implement and Hardware Dealers, which is the largest and strongest of all the retail implement dealer organizations in existence, to the effect that in Kansas and western Missouri, the territory covered by the organization, there are far more motor car dealers than implement dealers successfully selling tractors.

This is an important and significant admission, because, if the implement trade cannot retain control of the tractor business in that territory wherein the dealers are most strongly organized, it certainly cannot hold onto it in other sections of the country, when it is confronted with the better equipment of the motor car dealer for service and with the better business methods and more aggressive business tactics of the motor car men.

## Sell Equipment Too

Another thing which indicates the trend of the tractor trade toward the motor car dealer, brought out strongly at the Salina demonstration, was the contracting by motor car dealers for the operative equipment which must be used with the tractor. Motor car dealers who last

# The Tractors at Salina

## 5-Wheeled Tractors

**Nilson Tractor Co., Minneapolis.**—2 models: Senior, 24-36; Junior, 16-27; 5-wheel; 3 drive wheels; outer wheels removable; final drive, chain; sliding gear transmission of own design; Waukesha engine, 4-cyl., ver.; Kingston carburetor; Bennett air cleaner; kerosene.

## 4-Wheeled Tractors

**Acme Harvesting Machine Co., Peoria, Ill.**—1 model: Acme, 12-24; interchangeable from 4-wheel, with live axle, to 2 crawlers and 2 steering wheels; final drive direct spur gear; sliding gear transmission; Beaver engine; 4-cyl., ver., valve-in-head; Kingston carburetor; Bennett air cleaner; kerosene.

**Advance-Rumely Thresher Co., La Porte, Ind.**—4 models: Oil Pull, 12-20, 14-28, 20-40 and 30-60; 4-wheel type; spur gear final drive; live axles; enclosed gear transmission; company's own make engine; 2-cyl., hor.; Secor-Higgins carburetor; kerosene.

**American Tractor Corp., Peoria, Ill.**—1 model: Yankee, 12-25; 4-wheel; internal spur gear final drive; sliding gear transmission; Erd engine; 4-cyl., ver., valve-in-head; Kingston carburetor; Bennett air cleaner; kerosene.

**Aultman & Taylor Mach. Co., Mansfield, Ohio.**—3 models: 15-30, 18-36, 30-60; 15-30 is 4-wheel; gear drive; con. clutch; Waukesha engine; 4-cyl., ver.; Kingston carburetor; Bennett air cleaner; kerosene; 18-36 and 30-60 are 4-wheel; direct spur gear final drive; company's own sliding gear transmission; 4-cyl., hor., valve-in-head; engine, company's own design; Kingston carburetor; kerosene.

**Avery Co., Peoria, Ill.**—7 models: 5-10, 8-16, 12-25, Liberty, 18-36, 25-50; 40-80; all 4-wheel; external spur gear final drive; sliding gear transmission; Kingston carburetor; Bennett air cleaners; all kerosene except 5-10, which burns gasoline; engine in the 5-10 is own, 4-cyl., ver., engine in 8-16 and 12-25 is 2-cyl., op.; engine in Liberty, 18-36, 25-50 and 40-80 is 4-cyl., op.

**J. I. Case T. M. Co., Racine, Wis.**—4 models: 10-18, 15-27, 20-36, 20-40; all live axles and all 4-wheel but one, which is 3-wheel, the steering wheel being in front. All have spur pinion final drive and sliding gear transmission; engines, own design, 2-cyl., op., on the 20-40, and 4-cyl., ver., in the other three; Kingston carburetor; own type air washers; kerosene.

**Coleman Tractor Corp., Kansas City.**—1 model: 16-30; 4-wheel; final drive direct from engine through worm to rear axle, of the semi-floating type; Climax engine, 4-cyl., ver.; Stromberg carburetor; Cole air washer; kerosene.

**Dauch Mfg. Co., Sandusky, Ohio.**—2 models: Model J, 10-20; Model E, 15-35; Model J, 4-wheel; internal gear drive; sliding collar transmission; own engine; 4-cyl., ver., L-head; Kingston carburetor; Bennett air cleaner; kerosene. Specifications for Model E the same except it is worm driven.

**Electric Wheel Co., Quincy, Ill.**—1 model: All-work, 14-28; 4-wheel; internal spur gear final drive; sliding gear transmission; own engine; 4-cyl., ver., L-head; Kingston carburetor; kerosene.

**Emerson-Brantingham Co., Rockford, Ill.**—4 models: H, 9-16; AA, 12-20; D, 20-25; Q, 12-20; specifications on all the same except Model AA has internal spur gear drive; others have external; Model D has dead axle; all others have live axles; common specifications are: 4-wheel; sliding gear transmission; all engines are own, 4-cyl., ver.; Bennett carburetor; Bennett air cleaner; kerosene.

**Henry Ford & Son, Inc., Dearborn, Mich.**—1 model: 4-wheel; worm drive; Ford engine; 4-cyl., ver.; own mixer; own air washer.

**Four Drive Tractor Co., Big Rapids, Mich.**—1 model: 15-30; 4-wheel; bevel pinion in front and worm in rear final drive; enclosed gear transmission; drive on all 4 wheels; Waukesha engine, 4-cyl., ver., L-head; Kingston carburetor; Bennett air cleaner; kerosene.

**Frick Co., Inc., Waynesboro, Pa.**—1 model: 12-25; 4-wheel; external spur gear final drive; Nuttall transmission; Erd engine, 4-cyl., ver., valve-in-head; Kingston carburetor; Bennett air cleaner; kerosene.

**Hart-Parr Co., Charles City, Ia.**—1 model: 4-wheel; internal spur gear final drive; sliding gear transmission; own engine, 2-cyl., twin, hor.; Stromberg carburetor; kerosene.

**Hession Tiller & Tractor Co., Buffalo, N. Y.**—1 model: 13-30; 4-wheel; internal spur gear final drive; sliding gear transmission; Erd engine, 4-cyl., ver.; Kingston carburetor; Bennett air cleaner; kerosene.

**Huber Mfg. Co., Marion, Ohio.**—1 model: Light Four, 12-25; 4-wheel; internal spur gear final drive; sliding transmission; Waukesha engine, 4-cyl., ver., L-head; Kingston carburetor; own design air cleaner; kerosene.

**Interstate Tractor Co., Waterloo, Ia.**—2 models: Plowman, 15-30; Plowboy, 13-30; 4-wheel; internal spur gear final drive; Foote transmission; Buda engine, 4-cyl., ver., L-head; Bennett carburetor; Bennett air cleaner; kerosene.

**International Harvester Co., Chicago.**—3 models: Titan, 10-20; Mogul, 10-29; International, 15-30; 4-wheel; chain drive; live axles; selective sliding gear transmission; Titan engine, 2-cyl., twin; In Mogul, 1-cyl.; in International, 4-cyl., twin; all equipped with I. H. C. special mixers and air cleaners; kerosene.

**Kenison Mfg. Co., Solomon, Kan.**—1 model: 12-24; 4-wheel; internal spur gear final drive; sliding gear transmission; Waukesha engine; 4-cyl., ver.; Kingston carburetor; kerosene.

**John Lauson Mfg. Co., New Holstein, Wis.**—1 model: 15-25; 4-wheel; internal spur gear final drive; Lauson sliding gear transmission; Lauson-Beaver engine, 4-cyl., ver.; Kingston carburetor; Oren air cleaner; kerosene.

**Liberty Tractor Co., Minneapolis.**—1 model: 15-30; 4-wheel; live axle drive direct to drive wheels; enclosed gear transmission; Climax engine, 4-cyl., ver., L-head; Stromberg carburetor; Bennett air cleaner; kerosene.

**Minneapolis Steel & Machinery Co., Minneapolis.**—3 models: 15-30, 25-45, 40-65; 4-wheel; internal spur gear final drive; sliding gear transmission; Twin City engine, 4-cyl., ver., L-head; Kingston carburetor; Bennett air cleaner; kerosene.

**National Tractor Co., Cedar Rapids, Ia.**—1 model: 12-22; 4-wheel; patent drive through gear to sleeve on axle; friction transmission; Waukesha engine, 4-cyl., ver., L-head; Kingston carburetor; Bennett air cleaner; kerosene.

**Parret Tractor Co., Chicago.**—2 models: E, 12-25; H, 12-25; 4-wheel; spur pinion and gear final drive; sliding gear transmission; Buda engine, 4-cyl., ver., L-head; Kingston carburetor; kerosene.

**Peoria Tractor Corp., Peoria, Ill.**—1 model: 12-25; 4-wheel; internal spur gear final drive; Nuttall transmission; Climax engine; 4-cyl., ver.; Stromberg carburetor; Bennett air cleaner; kerosene.

**Port Huron Engine & Thresher Co., Port Huron, Mich.**—1 model: 12-25; 4-wheel; spur and bevel differential; friction drive; Erd engine, 4-cyl., ver.; Kingston carburetor; Bennett air cleaner; kerosene.

**Rock Island Plow Co., Rock Island, Ill.**—2 models: Helder Model D, 9-16; Helder, Model C, 12-20; 4-wheel; friction drive; floating rear axle; final drive, spur pinion and gears; Waukesha engine; 4-cyl., ver.; Kingston carburetor; Bennett air cleaner; kerosene.

**R & P Tractor Co., Alma, Mich.**—1 model: 12-20; 4-wheel; internal spur gear final drive; sliding gear transmission; Waukesha engine, 4-cyl., ver., T-head; Stromberg carburetor; Bennett air cleaner; kerosene.

**Russell & Co., Massillon, Ohio.**—4 models: Little Boss, 12-24; Little Boss, 15-30; Big Boss, 20-40; Giant, 30-60; Little Boss models are 4-wheel; external spur gear final drive; sliding gear transmission; Waukesha engine, 4-cyl., ver.; Kingston carburetor; Bennett air cleaner; kerosene. Big Boss and Giant models are 4-wheel; external spur gear final drive; sliding gear transmission, former with 4-cyl., ver., Model engine, and latter with company's own 4-cyl., ver. engine; both with Kingston carburetors and Bennett air cleaners; kerosene.

**Turner Mfg. Co., Port Washington, Wis.**—2 models: Simplicity, 12-20 and 14-25; 4-wheel; spur gear and roller pinion final drive; Foote transmission; engine, on 12-20; Waukesha, 4-cyl., ver., on 14-25; Buda, 4-cyl., ver.; Kingston carburetor; Bennett air cleaner; kerosene.

**Velle Motors Corp., Moline, Ill.**—1 model: Biltwell, 12-24; 4-wheel; enclosed spur pinion final drive; sliding gear transmission; own engine, 4-cyl., ver., L-head; Kingston carburetor; Bennett air cleaner; kerosene.

**Waterloo Gas Engine Co. (Deere & Co.), Waterloo, Iowa.**—1 model: Waterloo Boy, Model N, 12-25; 4-wheel; internal spur gear final drive; sliding gear transmission; live axle; own engine, 2-cyl., twin, valve-in-head; Schebler carburetor; own air cleaner; kerosene.

**Wisconsin Farm Tractor Co., Sauk City, Wis.**—1 model: 16-32; 4-wheel; external

spur gear drive; Foote transmission; Climax engine; 4-cyl., ver., L-head; Stromberg carburetor; Bennett air cleaner; kerosene.  
**Acme Harvesting Machine Co.**—(See 4-wheeled.)

## No-Wheeled Tractors

### (Crawlers and Others)

**Bullock Tractor Co., Chicago.**—1 model: 15-25; 2 track layers and 2 steering wheels; chain final drive; bevel gear transmission; Waukesha engine, 4-cyl., ver., valve-in-head; Bennett carburetor; Bennett air cleaner; kerosene.

**Cleveland Tractor Co., Cleveland.**—1 model: 12-20; track layer; final drive through bevel pinion from transmission to driving axle; sliding gear transmission; Weidley engine, 4-cyl., ver., valve-in-head; Kingston carburetor; own air cleaner; kerosene.

**Gray Tractor Co., Minneapolis.**—1 model: drum type; drive direct from crankshaft through spur pinions; Waukesha engine, 4-cyl., ver.; Bennett carburetor; Bennett air cleaner; gasoline.

**Joliet Oil Tractor Co., Joliet, Ill.**—1 model: Steel Mule, Model D; 2 driving tracks; 2 steering wheels; final drive gear to driving axle; enclosed sliding gear transmission; Erd engine, 4-cyl., ver., valve-in-head; Bennett carburetor; Bennett air cleaner; kerosene.

## 2-Wheeled Tractors

**Moline Plow Co., Moline, Ill.**—1 model: Universal Model B; 2-wheel; operator on implement pulled. Internal spur gear drive; enclosed gear transmission; own engine, 4-cyl., ver.; Holley carburetor; gasoline; electric starting, governing and lighting.

**Royer Enslage Harvester Co., Wichita, Kan.**—1 model: 25-35; 3-wheel; one drive wheel and two steering wheels; final drive, chain; bevel friction transmission; Erd engine, 4-cyl., ver.; Kingston carburetor; own design air cleaner; kerosene.

**Square Turn Tractor Co., Norfolk, Neb.**—1 model: 18-35; 3-wheel; 2 drive wheels and caster wheel in rear; internal spur pinion final drive; friction transmission; Climax engine, 4-cyl., ver., L-head; Stromberg carburetor; Bennett air cleaner; kerosene.

**Wallis Tractor Co., Racine, Wis.**—2 models: Wallis Cub, Model D, 26-62; Wallis Cub, Jr., Model J, 15-25; 3-wheel; steering wheel in front; final drive, internal spur gear; sliding gear transmission; own engine, 4-cyl., ver.; Kingston carburetor; Bennett air cleaner; gasoline.

## 3-Wheeled Tractors

**Bull Tractor Co., Minneapolis.**—1 model: Big Bull; 3-wheel; one bull wheel and supplementary drive on the land wheel; final drive by roller pinion and bull gear; enclosed gear transmission; Toro engine, 2-cyl., op., L-head; Kingston carburetor; Clapper vaporizer; Donaldson air cleaner; kerosene.

**J. I. Case T. M. Co.**—(See 4-wheeled.)  
**General Motors Co., Pontiac, Mich.**—1 model: Samson sieve grip; 3-wheel; steering wheel in front; final drive, internal spur gear with roller pinions; enclosed gear transmission; own engine, 4-cyl., ver.; Marvel carburetor; own air cleaner; gasoline.

**La Crosse Tractor Co., La Crosse, Wis.**—1 model: Happy Farmer, 12-24; 3-wheel; two drive wheels; steering wheel in front; roller pinion spur gear final drive; enclosed gear transmission; own engine, 2-cyl., hor.; Kingston carburetor; own make centrifugal air cleaner; kerosene.

**Midwest Engine Co., Indianapolis.**—1 model: Atlas, 16-26; 3-wheel; steering wheel in front; internal spur gear final drive; sliding jaw clutch transmission; Waukesha engine; 4-cyl., ver.; Kingston carburetor; centrifugal air cleaner, own design; kerosene.

## Equipment and Machinery

Motor cultivators were shown by the Emerson-Brantingham Co., the International Harvester Co. and the Avery Co. The latter also had a motor-driven corn planter on exhibition.

Tractor tillage implements were shown by the Oliver Chilled Plow Co., South Bend, Ind., the Rock Island Plow Co., Rock Island, Ill., the Vulcan Plow Co., Evansville, Ind., the Newell Sanders Plow Co., Chattanooga, Tenn., the Grand Detour Plow Co., Dixon, Ill., Deere & Co., Moline, Ill., Moline Plow Co., Moline, Ill., Parlin & Prendorff Co., Canton, Ill., the International Harvester Co., Chicago, Ill., Roderick Lean Mfg. Co., Mansfield, Ohio.

Harvesting and hay making machinery was shown by the International Harvester Co.,

(Continued on page 12)

year began to dabble tentatively in the tractor business next year will have gone in wholeheartedly after the inspiration they absorbed at Salina, and, with the tractor, they will sell the power equipment.

G. L. Hudkins, who has organized and who heads as president the Hudkins Tractor Co., Salina, the concern which will distribute the Fordson tractor in the northern half of the state, tells his dealers that within a year they will be selling a large percentage of the power operative equipment which will be used by the farmers in their respective localities. And what is of still greater import, these dealers are believing what he tells them. And all of them are motor car men.

#### Car Dealer's Chance Good

The foregoing is mentioned merely as an instance of what is happening in a section of the country where the retail implement dealer is stronger than he is anywhere else. If the motor car dealers can take the business here—and they are doing it—then the chances for the motor car dealer in the tractor business elsewhere in the country must be still better.

*The very character of the display at Salina brought out prominently the merchandising possibilities. For the first time at a tractor demonstration, the exhibition of power equipment, both for drawbar and for belt, vied in size and importance with the display of tractors. In addition, the demonstration that was made at Salina of the many things that a tractor will do on the average farm was an object lesson to the visiting dealers of the extent and magnitude of the trade they may have once they have established themselves firmly in the tractor business.*

#### Equipment of Great Interest

One who watched the field demonstration could not but be impressed by the fact that the interest of the crowd was as much or more centered upon the tillage and harvesting machines which were shown in operation as they were in the plowing. As a matter of fact, there no longer is any novelty in watching a tractor pull a plow. Everybody has seen it and knows that it can be done. But everybody does not know as well that a tractor is equally useful in pulling disks and packers and seeding machines and binders and mowers and headers and hay loaders and manure spreaders and wagon trains and a lot of other things which have to be hauled.

Neither did the dealer who is not experienced in the tractor business know about this so well. Thus it happened that after the tractors pulling the gang plows had gone down the field they were not followed as they have been in the past, but the crowd waited to watch the tractors which followed them and which were pulling implements which were not so familiarly known to be tractor drawn.

#### Should Sell Machinery Too

In many respects this was the most notable part of the demonstration and was far more educational to both farmer and dealer spectators than was any other

phase of the event. For the dealer it opened up visions of trade development which perhaps he never before had seen, and as a result of the show at Salina doubtless many motor car dealers will have gained a wider conception of the possibilities of the trade upon which they recently have entered. *Most of them henceforth will sell power equipment as well as tractors.*

Just as a typical example of the sort of demonstration of tractor versatility pulled off by some of the concerns attention may be called to that of one of the larger companies. Following the tractors pulling plows there came other tractors pulling disk gangs and pulverizers, disk gangs, grain drills and cultipackers, motor cultivators pulling corn planters, liters and cultivators, other tractors pulling binders, headers and other harvesting machinery, thus presenting at the same time a whole series of operations from the turning of the soil to the harvesting of the crops, with intermediate cultivation—all tractor handled. This could have had no other effect than to open the eyes of the dealers to the possibilities inherent in the tractor trade.

#### Belt Service Important

This sort of demonstration with all varieties and combination of tractor-drawn equipment was taking place all over the demonstration grounds. Meanwhile, up behind the exhibition tents were tractors driving belt machinery such as threshing machines, silo fillers, corn shellers, hay balers and other power-driven equipment. As a presentation to the dealer of the merchandising possibilities this was the most comprehensive, the most suggestive, the most educative exhibit ever held in this country. This is why in part the Salina demonstration will be a mile post in tractor history.

Another reason is that for the first time in tractor history, as far as that which has been written in the United States is concerned at any rate, an effort was made to establish some authentic records. Unfortunately these tests were entered voluntarily by the participants, hence the results are private and not public property. But the fact that over half of the tractor manufacturers represented at the Salina demonstration voluntarily submitted their tractors to dynamometer tests for drawbar pull and to prony brake tests for belt power is something new and encouraging.

#### Tests Will Be Compulsory

*It gives warrant for thinking that a break in the old prejudice against such tests has been made and promises that the time is coming in the near future when the manufacturers of tractors will be glad to demonstrate that their claims for efficiency are warranted by the results of public tests.*

Indeed, at the next demonstration drawbar and brake tests will be made compulsory, and the submission to such will be a condition upon allowing a tractor manufacturer to enter the demon-

stration at all. Then at last dealers and farmers will be permitted to know what they long have had a right to know definitely, but which they have heretofore had to take on faith. The assertion that such tests will be prescribed at the next demonstration is sanctioned by some of the officials of this year's demonstration.

But, however unsatisfactory from the point of view of the public, may have been the voluntary tests made at Salina this year, there was one which established more than one world record and which will gather historical importance as time goes on. This was the 100-hour non-stop plowing test put on by the Parret Tractor Co.

#### Plowed 100 Hours

While marred by some unfortunate misadventures which prevented the making of a flawless record, yet the plowing of approximately 80 acres in approximately as many hours of actual plowing, at a rate of fuel consumption only slightly in excess of 2 g.p.h., sets a mark in tractor performance. Possibly many other makes of tractors could have done as well. But the fact remains that this particular machine plowed 80 acres in as many hours, practically without a stop, and thus established the fact that the tractor may be depended upon by the farmer to carry his peak load whenever and however that presents itself.

This is a tremendous accomplishment. It is a conclusive demonstration that the tractor has arrived and that it is ready to do that for which it is intended. From the standpoint of the merchandiser, it provides the proof to back up what representation he may make as regards tractor endurance and efficiency and places in his hands a big selling argument.

In the past the dealer may have thought such a thing was possible; he may have asserted that it could be done, but never before did he have the accomplished fact upon which to fall back.

#### Hot Days No Drawback

There is still another fact which might be mentioned regarding the Salina demonstration which proves the truth of still another assertion the salesman will rely upon in the selling of tractors. This is that the tractor is immune to conditions which put horses entirely out of commission. This was abundantly demonstrated at Salina.

Here the tractors plowed on days when the heat measured in excess of 100 degrees and when it would have been impossible to keep horses at work. The heat at Salina may have been unusual. It is a good thing it was. The purpose of the demonstration—to show that the tractor would do what no other power unit on the farm could do—was most conclusively established, albeit to the discomfort of everybody not used to Kansas heat.

It would not be fair to close without saying something about the hospitable and creditable manner in which Salina took care of the large crowd. Everybody was pleased. If another demonstration is to be held in the West it is certain Salina will find many friends in the tractor crowd to favor her.

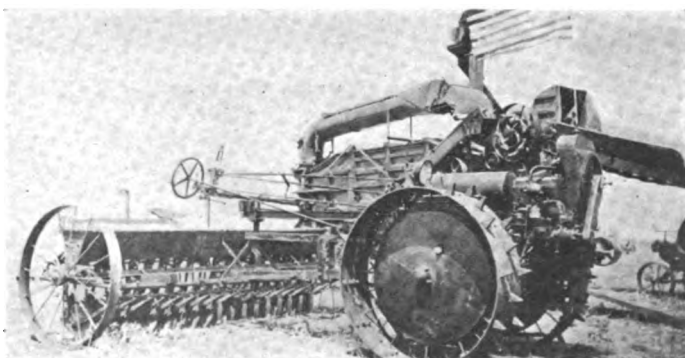


# At Salina the Tractors Did Many Jobs

*They Showed the Farmer That They  
Are More Than Plow-Pullers*



Avery tractor and Acme header



Moline Universal and big grain drill



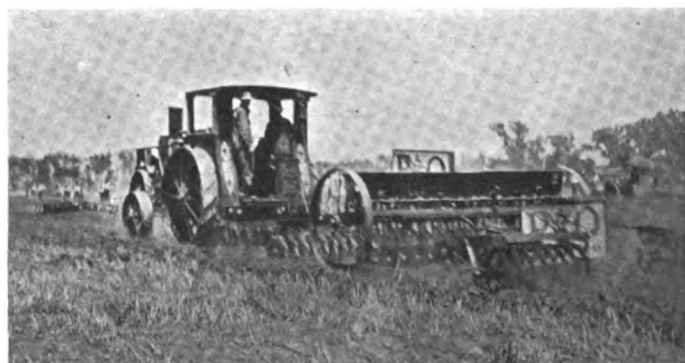
One of the Big 'Uns at Salina



Tractor pushing header—Machine used in the western grain fields



Spreading manure—Mogul, I.H.C. tractor



Disking, seeding and packing at one operation

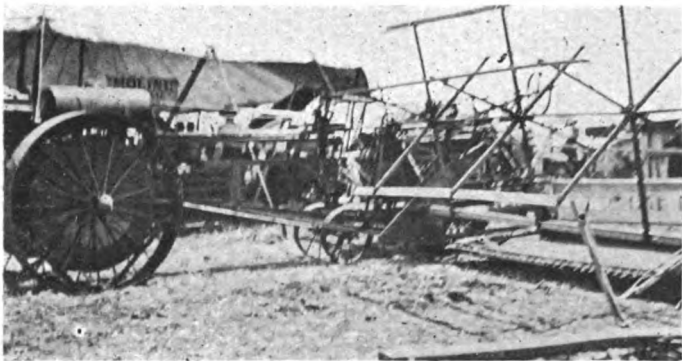
## *Machine Design Follows the Tractor*



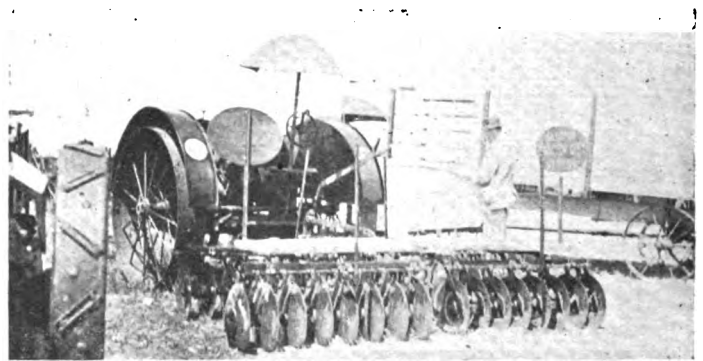
Shelling corn—Waterloo Boy tractor



Girl driving Avery motor corn planter



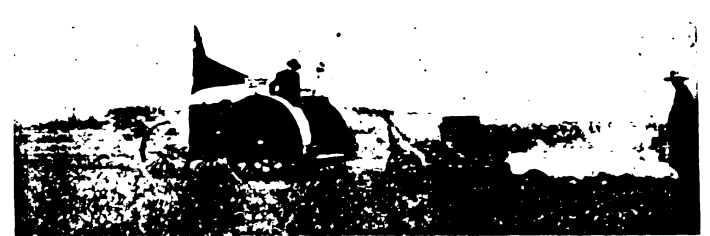
Moline Universal and biggest mower ever built—10-ft. cut



Happy Farmer tractor and La Crosse disk harrow



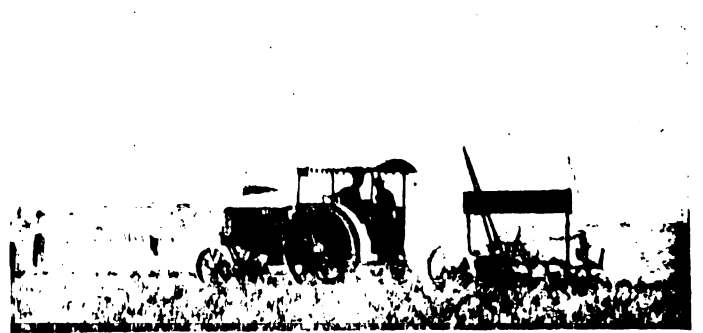
Girl driving Avery cultivator



Pulling the gang plow



Tractor and gang plow



Protected from the sun

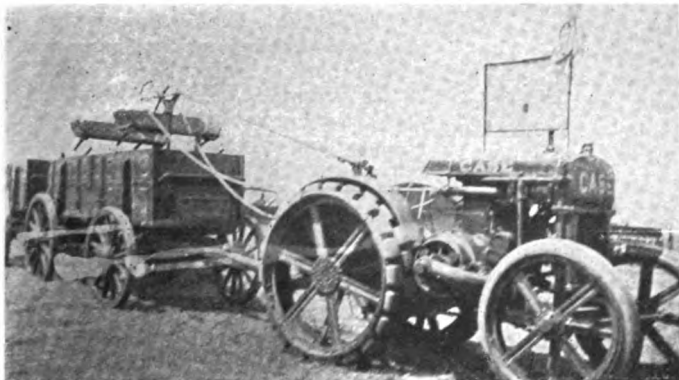
## *From Baling Hay to Spreading Straw*



Waterloo Boy tractor spreading straw to keep down dust



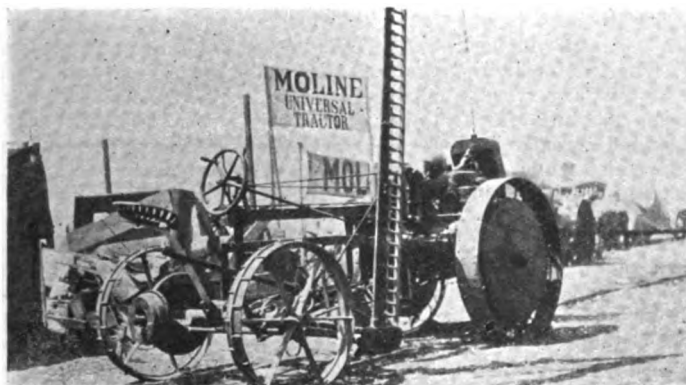
Happy Farmer tractor and straw spreader



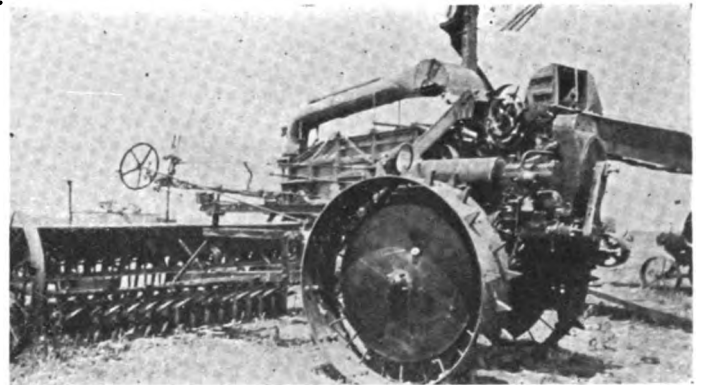
Driving from the wagon seat—Case tractor



Baling hay—Waterloo Boy tractor



Moline Universal tractor and 10-ft. cut machine



A close-up



Bosch had a fine exhibit



Seeding combination—disk harrow, grain drill and cultipacker

# Tractor Activity Increasing in Entire Dealer Field

## Tractors at Salina

(Continued from page 7)

the Moline Plow Co., the Acme Harvester Machine Co., Deere & Co.)

There was in addition an extensive display of silo fillers, straw spreaders, hay balers, manure spreaders, threshing machines, corn shellers, etc.

Tractor attachments were shown by the Guaranteed Tractor Co., Chicago, the Smith Motor Truck Corp., Chicago, American Form-a-Tractor Co., Minneapolis, and the 3 P Auto Tractor Co., Davenport, Ia.

## Urge Use of Tractors

LANCASTER, PA., Aug. 10—Extensive use of the farm tractor in planting wheat was advocated at a meeting here of the Pennsylvania State Agricultural Commission. Reports were heard on farming conditions in southern Pennsylvania. The Agricultural Department reports show a wide expansion of the area planted in buckwheat in the northern counties, and now many farmers are trying it in southern Pennsylvania.

## To Promote Better Farming

MILWAUKEE, Aug. 12—To promote the "Better Farming" movement and bring the tractor to the attention of every farmer in Wisconsin, representatives of all of the larger tractor manufacturers in this state have organized the Wisconsin Power Farming Association. The first general meeting was held in Milwaukee on Aug. 6. Officers have been elected as follows:

President, F. W. Kamm, sales manager tractor department Allis-Chalmers Mfg. Co., Milwaukee; vice-president, Fred F. Hatcher, manager Milwaukee branch John Deere Plow Co.; secretary, E. A. Braun, sales manager Trenam Tractor Co., Stevens Point, Wis.; treasurer, W. F. Loomis, manager Milwaukee branch Oliver Chilled Plow Co. F. W. Geddes, general manager of the Cleveland Tractor Sales Co., Milwaukee, is an additional director.

## Tractor Courses at University of Illinois

CHICAGO, Aug. 9—The series of 2-week war courses in tractor instruction at the University of Illinois will begin Oct. 14. Students for the courses, to the number of 25, will be admitted Monday, Oct. 24, and on each subsequent Monday until March 24, 1919. Tuition will be \$4. A card announcing the courses has been mailed to 10,000 tractor owners and other farmers in the state of Illinois.

The work of the courses will be of a very practical nature. It will consist of actual tractor practice, supplemented by lectures. Assurances of approval and assistance have been received from manu-

facturers of tractors, power farm operative equipment and tractor accessories. The course of instruction will be adapted to dealers as well as tractor owners and operators.

Already applications have been received by Prof. E. A. White, College of Agriculture, sufficient to warrant the conclusion that very soon the entire series will be subscribed.

## Tractor Test in Ohio

CINCINNATI, OHIO, Aug. 10—There was a tractor demonstration Wednesday, Aug. 7, on the Hamilton County Experimental Farm near Mt. Healthy, Ohio. Several thousand farmers were present. The Fordson, Cleveland and Sandusky machines were represented. There were non-competitive contests and the day was one of very great interest to the farmers. Ploughing was chiefly on the demonstration program, but other farm work was done. The farmers came for many miles and were quite enthusiastic.

## 26 Tractors at Fair

MILWAUKEE, Aug. 12—Twenty-six manufacturers of farm tractors have made reservations of space for display and demonstration purposes at the annual Wisconsin State Fair to be held at West Allis, Milwaukee County, during the week of Sept. 9-14. The tractor show is expected to be one of the largest yet held in connection with a state fair. The department is operated directly by the management of the fair, while the motor car and truck exposition will again be under the immediate direction of the Milwaukee Automobile Dealers, Inc., which has conducted the motor show on the fair grounds for four years past. The tractor show will be under a tent, while the motor show will occupy a mammoth fireproof building erected for this purpose several years ago. O. E. Remey is general secretary of the fair.

## Tractor Demonstration in Pennsylvania

WELLSBORO, PA., Aug. 10—Two thousand people attended the tractor demonstration that was held at the County Farm here. Visitors were present from New York State and neighboring counties, as well as from every part of Tioga County. The ten tractor companies were represented by 60 salesmen and machinists, and good-natured rivalry existed throughout the demonstration.

The plots of ground which the several tractors plowed varied in size, but at the conclusion of the exhibition each tract of ground was measured and all

records were calculated on the basis of one acre. Some of the companies demonstrated discing after they had finished their plots. The quality of work was of great interest to those present.

The data secured on the time, fuel and expense required to plow one acre are suggestive of the value of the respective tractors. Those demonstrating were: Emerson-Brantingham, Frick, Avery, Moline, Titan, I. H. C., Waterloo Boy, Parrett, Cleveland.

## Oregon Tractor Show Sept. 25

PORTLAND, ORE., Aug. 9—The proposed automobile, truck and tractor show will be held at Salem, Ore., Sept. 25 to 29, as originally decided. One hundred and sixty entries will be housed in the big pavilion on the State Fair Grounds. The show will be given under the auspices of the Dealers' Motor Car Association of Oregon.

## Moto-Meter Equipped Tractors at Salina

NEW YORK, Aug. 9—Eighty-two per cent of the tractors taking part in the demonstration held at Salina, Kan., were equipped with the Boyce Moto-Meter.

## To Finance Truck and Tractor Sales

BOSTON, Aug. 10—With a capitalization of \$1,000,000, nearly all of which has been paid in, the Commercial Finance Corp. of Boston, Mass., is about ready to start operations financing the sale of motor trucks and tractors throughout New England at first and other parts of the country later. While motor dealers are not behind it as a body a number of them have invested in the company. On the board of directors are: F. A. Hinchcliffe, of the Jordan agency, who is treasurer of the Boston Automobile Dealers' Association; Edward C. Becker, of the Becker-Stutz Co., and John L. Judd, who sells the Smith Form-A-Truck, Gramm-Bernstein and Columbia trucks and the Allen and Auburn cars. It is planned to put other motor dealers on the board later. Some of the prominent financiers in Boston are identified with the company. With the tractor field probably dead in New England due to motor dealers not paying any attention to this type of vehicles, the men behind the new company will try to interest farmers in speeding up through the use of such vehicles, and from tractors to trucks to carry the product to market will be a short step. It will finance the buying of passenger cars, too, and its charter allows it to deal in other things, but at first the truck and tractor field will engage the attention of the officers.



# Putting Profits Into Truck Service

More Work — Fewer Men  
Better Wages — Less Cost

## GARFORD'S ACHIEVEMENT IN FIGURES

—Week Ending—			
July 25, 1918      July 25, 1917			
Jobs turned out . . . . .	59	52	13½ per cent increase
Mechanics employed . . .	38	63	39½ per cent decrease
Helpers employed . . . .	6	14	57 per cent decrease
Total wages paid . . . .	..	..	34 per cent decrease
Aggregate . . . . .	..	..	33 1-3 per cent increase



W. H. MOORE  
Manager of the Garford Branch in  
New York City

**T**URNING out more jobs with a smaller force and a curtailed payroll is the achievement of the Garford Motor Truck Co., Inc., New York.

When clouds began to appear in the sky of the labor supply, W. H. Moore, the manager, held commune with his superintendent of service, Arthur J. Lambert, and a vigorous campaign was launched to cut down idle time and make every minute count.

*In the month of July, 1918, 237 jobs were turned out as against 210 jobs for July, 1917, an increase of 27.*

*For one week ending July 25, 1918, the payroll was \$588.60 less than the corresponding week in July, 1917.*

*In 1918 in this week there were 38 mechanics and 6 helpers employed as against 63 mechanics and 14 helpers in that same week in 1917.*

*In another typical week ending May 2, 1918, the payroll was \$410.97 less than the corresponding week in May, 1917.*

A number of small and large details are responsible for the saving in money on the payroll and the increased number of jobs turned out.

One of the first reforms made was the elimination of the helper evil. It had always been the custom to assign

a helper to work along with the mechanic on certain jobs where four hands were needed from time to time.

Lambert found that this did not work out exactly the way it should. With a helper, the mechanic did not seem to get as much work done as he would ordinarily accomplish by himself. It seemed that the presence of the helper tended to waste time in talking, joking, poking fun and that sort of thing.

Things were changed around, and now, when a mechanic needs a helper to help lift off something, he calls for help and a helper is sent to him to assist only as long as he is actually needed. About one helper is used on each floor and this is considered sufficient. Fourteen helpers were formerly employed.

It has been found that the mechanics have been able to turn out a far greater amount of work with this arrangement and money and time are saved all around.

It was formerly the custom to charge the helper's time on the job when he was working right along with the mechanic. Now the time of the helper is not charged to the job where the time is just a few minutes, but if the helper should be required for an hour or more, his time is entered upon the time card the same as the mechanic's.

Cheap and inefficient help has been almost entirely eliminated. It is considered that a job cannot be done too well. The men who are employed are high class men, they are paid good wages, their wages have been materially increased and the quality of their work

is the best that it is possible to get from automobile mechanics.

The work is sub-divided as far as possible. There are men who do nothing but scrape engine bearings, there are other men who do nothing but engine work, there are still others who do nothing but axle work, and so on. There is a paint shop, carpenter shop and so on, and all the men in all these are specialists in their lines and do the work the best that it is possible to be done. Although these men are paid higher wages than a number of other men, yet they know their work so well that they can turn out considerably more work in a shorter time than cheaper men.

Another detail that was taken up was the matter of elevator service. It costs approximately 14 cents for an elevator to make a round trip, and when it is considered how many round trips the elevator makes in a day, the saving that could be made is quite considerable. Therefore, Lambert looked around and found that a number of trips of the elevator were really useless and could be eliminated.

First, there are some trucks with very long chassis and overhanging bodies which come into the shop for minor adjustments on the engine. Formerly it was necessary to remove the bodies from these before they would go up in the elevator and then take them upstairs to have the adjustments made. These adjustments are now made downstairs, and it is not necessary to remove the body nor waste a trip in the elevator.

The superintendence has been very carefully worked out. The superintendent of service has entire charge of the shop parts of the building. Under him are various foremen who are specialists in their particular lines. For instance, there is a foreman of the engine de-

(Continued on page 15)

# RURAL MOTOR EXPRESS

*Are You Getting Behind the Big Idea?*

LISTEN: TRUCK DEALERS!

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**T**HE Rural Motor Express will help solve the short-haul transportation problem. It will bring the country nearer to the city. It will help the farmer market his products. It will help him produce more because it will run his errands in town for him. And—it means truck sales for the dealer. When the idea reaches full development it will mean the sale of thousands of trucks. Therefore, it is a job for the truck dealer and for dealer associations to get behind the Rural Motor Express and build for the future. The Rural Motor Express is NOT a Return Loads Bureau. It is a stage line that runs through the country and picks up and drops freight like a parcel post man. The National Motor Truck Committee of the N. A. C. C., managed by Samuel A. Miles, assisted by F. W. Fenn, at 7 East 42nd Street, New York, is distributing literature on how to start and operate a Rural Motor Express. Write to Miles. Here is a report from this committee on the week's developments.

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**T**HE North Carolina Good Roads Convention is holding a meeting at Brightville Beach, N. C., for the development of good roads and Rural Motor Express. They have just written in for 200 copies of literature for distribution, and it looks as though they would have some progress to report in a few days.

"The Chamber of Commerce of Conneaut, Ohio, reports that they are repairing their roads and that they hope to have in the near future lines of Rural Motor Express operating back in the farming country. They are situated twenty-four miles south of the nearest railway and are in what they consider a good farming country.

"The Brownsville Texas Chamber of Commerce reports that they have one rural express line operating between San Benito and Brownsville, Texas, consisting of two trucks doing a Rural Motor Express and return roads business. They are endeavoring now to organize other routes.

"The Kalispell Chamber of Commerce, Kalispell, Mont., have a glowing report. They state: 'We are developing the very conditions which you seek to establish throughout the country, although in a small way, and our boulevards are relieving the railroad freight situation. We have built out of Kalispell in a northerly direction a hard surfaced road to Whitefish, Mont. Whitefish is a division town of the Great Northern Railroad employing some 1500 people. Motor passenger and rural trucks make two trips daily over this road to these places. They are competing with the Great Northern in delivering freight to this point as well as passengers.'

"We are informed that the Joslyn Automobile Co., Rockford, Ill., had everything set and ready to start a line of Rural Motor Express from Rockford to

Davis Junction, Holcomb, Stillman Valley, Byron and return, when accidentally the local manufacturers' association secretary called our attention to the fact that should we start this route without taking the matter up with the state commission in charge of transportation, also file our rates before starting, that we would be subject to a penalty of \$5,000. They state they are taking this up at once and that it will not delay their plans.

"In Chillicothe, Mo., at a meeting of the Chamber of Commerce on the 31st of July action was taken endorsing and lending encouragement and co-operation in the matter of Rural Motor Express lines.

"The Oneida Motor Truck Sales Co. has about organized a road for operation. The line of trucks is out of Minneapolis through several miles of highway.

"A motor truck route has been organized and is operating or about to operate between Deadwood, S. D., and Sundance, Wyo.

"The Sandusky, Ohio, Chamber of Commerce reports that there is more need for Rural Motor Express as they are right in the very best farming district. They have truck lines operating over highways between Sandusky, Cleveland, Toledo and all other points.

"The Newton, Kan., Central Kansas Retailers' Association reports: 'We have two lines in operation handling milk and cream and one other project in process of organization.'

"We are just advised by the Buffalo Chamber of Commerce that they have in operation between Buffalo and Springville, N. Y., a distance of some thirty miles, a line of Rural Motor Express operated by a man by the name of Wilkins. He says he has been carrying everything a truck can carry. However,

it serves the farmers along his route principally and has a comprehensive tariff covering all commodities. He started out with one truck and will add more as business increases.

"There are fifteen to twenty different lines operated out of Buffalo which, however, carry freight exclusively, and which might be induced, with a little publicity, to carry farm products, etc.

"We are just in receipt of advice that a Rural Motor Express is in operation from Austin, Minn., to Blooming Prairie, Minn. It is run by a man by the name of Gamble Robinson, and on his first trip he carried 3940 lbs. of farm products. He says the truck was piled high with provisions ordered by the merchants of Blooming Prairie, and which would have reached the village by a slow freight ordinarily. When the load was ready to start a sign was placed on each side of the load reading: 'First Big Overland Express Co. From Austin, Minn., to Blooming Prairie, Minn. Fruit and Groceries. From Gamble Robinson Austin Co.'

"This was the first of what will be known as the 'Overland Express' which will probably be instituted by the wholesalers and manufacturers of that city to carry goods to the other places and bring back the products of the farms to the city.

"Here is a further report from Mason City, Iowa, which is a copy of a letter sent us by J. O. Eggleston, of the International Harvester Co. of America:

"I was called before the State Council of National Defense Aug. 2 to address them on 'Motor Truck Transportation.' After I was through talking they passed a resolution endorsing the motor truck as a war measure for overland short-haul freight.

"They also appointed a Motor Truck Transportation Committee to have full

charge of this work, with Frank Everest, Council Bluffs, Iowa, as chairman.

"I submitted to them a map wherein I had laid out routes to all of the principal shipping points in Iowa. Arrangements are now being made for me to take this up with the Chamber of Commerce and Commercial Club at these points with a view to establishing Motor Truck Express all over the State of Iowa.

"I would be pleased to have you send me at least 300 of your illustrated Rural Motor Truck express posters, also a large quantity of each different folder, booklet, etc., that you have on this subject.

"Would be pleased to have you write Frank Everest, Chairman of State Council of Defense Committee, Council Bluffs, Iowa. This gentleman is a good live, enthusiastic worker for Motor Truck Express Routes.—International Harvester Co. of America."

"A line has been started between Portland, Me., and Bath, Me., by a man by the name of Coty. The Packard Motor Car Co. was instrumental in starting this line.

"George H. Amos, of Knoxville, Marion County, Iowa, states: 'I am interested in starting two or three G. M. C. 2-ton trucks from the county seat, Knoxville, to some inland towns, 14 to 20 miles away. There are no railroads through these towns, and the cattle, hogs and grain are driven or hauled by wagons. The loss or shrinkage on cattle and hogs is large.'

"G. C. Halsey, sales manager Master Truck Co. of Nebraska, writes: 'We have plans under way for organizing a rural motor express route in eastern Nebraska and western Iowa.'

"We are just in receipt of word from the Chamber of Commerce, Weatherford, Texas, as follows: 'A large number of trucks here, belonging to the farmers, are utilized by them in hauling produce. Many of the farmers use trailers, which they hitch to their own cars, which bring in heavier loads. There are a large number of farmers who own trucks of 1, 1½ and 2-ton capacity, all of which do an extensive business in hauling produce and merchandise.'"

## Rural Express Makes Sales in Louisville

*Expressman Starts with One Truck and Has Since Bought Six—Profit of 33 1/3 Per Cent*

LOUISVILLE, KY., Aug. 8—Zachary J. Stone, better known as "Peck" Stone, has the distinction of operating the first rural motor express and freight route near Louisville. He started with one truck and now operates six motor vehicles, hauling produce and live stock to the city and returning with general merchandise.

*As business increases another truck is added.*

About ten years ago Stone owned a farm which wasn't a paying proposition, so he decided to go into the huckster business. He bought a three-horse huckster wagon and drove it back and forth between Louisville and Taylorsville, a distance of 56 miles, for seven years.

He carried eggs, butter, chickens and other general produce, peddling them to retailers in the city. Then he loaded up with merchandise and hauled it to Taylorsville merchants.

It was slow going in those days, for it took Stone six days to make the trip both ways. With his motor truck he makes the 56 miles in three or four hours.

Although Stone had about \$1,000 invested in his horse-drawn equipment, he knew he couldn't increase his profits unless he could make more trips, and he made up his mind to buy a motor truck. On March 10, 1913, he borrowed \$1,600 and purchased a 1-ton Jeffery from the Prince Wells Co. He ran it for four months from Louisville to Bloomfield—41 miles—via Fairfield—32 miles. This vehicle, according to the owner, proved too small for the work and he sold it. Later he bought a 2½-ton Indiana, but it was destroyed by fire.

In April three years ago Stone purchased a 1-ton Service truck from Jacob Weber's Sons. He has been making money ever since. Business continued to grow, more trucks being needed. So in May, 1915, another Service was bought, in September a third and the following spring a fourth.

In May, 1917, two more were added. As profits grew Stone signed a note for another truck, and the truck dealer took a mortgage on the vehicle. The dealer knew Stone was making good. The bigger the former huckster's business grew the more trucks the dealer would sell, so he figured he could afford to give Stone plenty of time to meet his notes.

Six motor vehicles—of 1, 1½ and 2 tons—are now being operated over the following routes through some of the richest country in Kentucky:

From Louisville to Bloomfield—41 miles—via Fairfield—32 miles. Time required, four hours for freight and three hours for passenger and express truck.

From Louisville to Eminence—45 miles.

From Louisville to Chaplin—45 miles. From Louisville to High Grove—26 miles.

A passenger and express line is also operated between Louisville, Bloomfield and Taylorsville. One of the trucks is equipped to haul live stock, and it is sent out over all of the routes when needed.

Twenty-five to 45 cents a hundred pounds is charged for regular freight and a rate of 45 cents per hundred pounds for live stock. Stone says his profits amount to about 33 1/3 per cent. His equipment represents about \$15,000.

## Putting Profits Into Truck Service

*(Continued from page 13)*

partment, and this foreman is an expert on the Garford engine and does nothing but handle jobs in this particular line. There are other foremen who are experts at other parts of the Garford truck, and these have nothing to do but that particular kind of work.

The superintendents and foremen are mostly all graduates of the Garford truck company's shop. The superintendent started to work some years ago in the Garford service station, and has worked his way right on up through the ranks to the position of superintendent of service.

### Job Must Be Right

Particular attention is paid to correctly finished work. The jobs are turned out in such a way that there is small likelihood of any coming back for any free adjustments or free service. If the job is not right, it does not go out of the shop. It is carefully inspected by the foreman of each particular department before it goes out, and any knocks, squeaks, chatters or creaks must be eliminated before the job is turned over. This prevents dissatisfaction in the owner's mind and saves time, labor and money for the service station.

Everything is systematized to the highest possible degree. No verbal orders are given anywhere in the plant. If anybody has any orders to give, they are put down on slips of paper, and these are eventually filed away for reference, so that no unmerited blame can be attached to any man for failing to carry out a verbal order.

### Tools Checked

All tools are kept in a tool stockroom and whenever a workman takes out a tool a brass check with the workman's number on it replaces the tool so that anybody can tell where the tool is. All orders for parts, and so forth, are made out on stock requisitions which are sent up to the stockroom by the stock clerk. The workman does not have to wait around until the part is delivered, but goes on with his work, and when the part comes from the stockroom it is delivered to the job so that he will not waste time waiting.

The entire shop is kept in an orderly manner. Everything is as clean as possible and porters are employed to clean up the place and keep it in good shape. There is no disorder, scattering of stock, tools, etc., around the place; the shop looks almost as neat as a parlor and everything is in the place where it belongs.

The success of the Garford branch in these times can be attributed directly to good superintendence, good work carefully done, making every minute count and the great attention to small details that will save minutes and cents. These all added together account for the unusual showing of the branch.

# The Industrial Truck, Tractor and Trailer

## A COMING AUTOMOTIVE PRODUCT and *An Opportunity for the Automotive Dealer*

### YOU SHOULD INVESTIGATE THIS SITUATION

**D**URING the Chicago Exchanged Car Show early this summer one of the most interesting parts of the exhibit was a little industrial tractor that ran around like a rabbit and did the work of a horse.

It was not really a part of the exhibit but was used to take cars in and out of the exhibit, for the cars on display were removed when sold—at certain hours—and other cars took their places.

This had to be done in a minimum of time and with a minimum of work and confusion. Wherefore, when it was time for a car to be moved out it was pushed on its way. When a car was ready to be moved in this little industrial tractor was run out in front of the car, a rope was attached and the tractor snaked the car into the building, after which the tractor turned around on a spot about as big as a Canadian cent and went out after more.

This tractor had a body about 4 or 5 ft. long. It was driven from electric batteries. One man rode on it and drove it, and he was as expert with his little electric horse as is any taxicab chauffeur in the tangles of Chicago's loop.

Many dealers looked at this tractor with interest, and to some of them it occurred that here was a product that would fit in well with the merchandise of the automotive dealer. It is very likely that ten years from to-day the industrial tractor and trailer will be making good profits for those foresighted dealers who get in while the

getting is good and become known as the headquarters for these vehicles.

There are two predominant reasons why the automotive dealer and the industrial tractor and trailer should hook up together.

1—*The automotive dealer needs more merchandise in his line.*

a—*For war times, when car production is low.*

b—*For peace times, when he wishes to expand his business greatly beyond present proportions.*

2—*The manufacturer of the tractors and trailers has no clearly defined system of merchandising and wants an outlet for the possible great expansion of his business. Instead of having to build anew a distributing system he can, through the automotive dealers, market his goods through an already existing merchandising organization which is more or less familiar with the principles of his product.*

As to reason No. 1 little need be said. The wise dealer of to-day is planning for the future, both next week and ten years from now.

Car production is going to a low ebb if the war lasts more than six or eight months longer. This means that the dealer who would stay in business—perhaps only hanging on with his teeth and keeping the sign over his door—is planning for means of supporting his business.

*Many already have trucks. Some have farm lighting outfits. A large number have tractors. And here is another automotive product.*

As to after-the-war business, there should be an expansion in all lines, and good earnings for the dealer who gets on his feet in a business way and builds intelligently for the future. With the exception of big distributors in popular, large-production lines, the car dealer's

business is more or less limited unless he becomes automotive. Without a line of automotive products he cannot get maximum results out of his territory. If he sells cars only he is passing up the opportunity of doing business with all those who want the other automotive products. Furthermore, his overhead through added products will not increase at all in proportion to the volume of business.

Wherefore, in seeking for added automotive products the industrial tractor and trailer should not be overlooked. It is only the well-known motor truck adapted for use in industrial plants—run generally by electricity.

The industrial tractor and trailer field produces three types of vehicles:

1—*The small industrial tractor, a compact unit which is purely a tractor.*

2—*The industrial trailer, which is a small trailer of various forms for use inside factories and for similar short haul, having no power plant.*

3—*The industrial truck, which is a combination of the trailer and tractor. It contains its own motive power and has a body for the carrying of goods. These doubtless are familiar to readers through their having been seen carrying baggage on the platforms at large railway stations.*

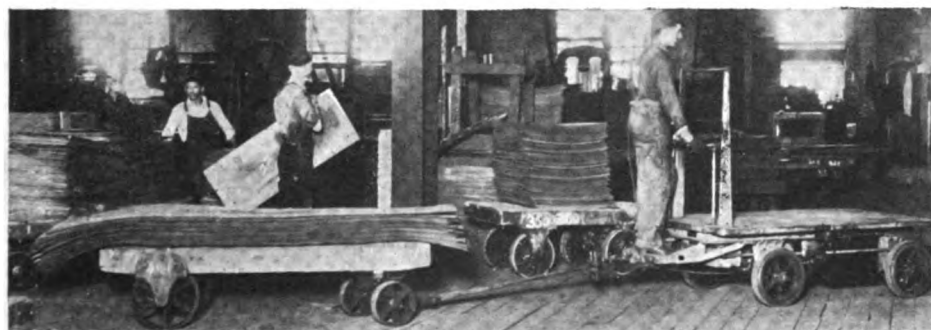
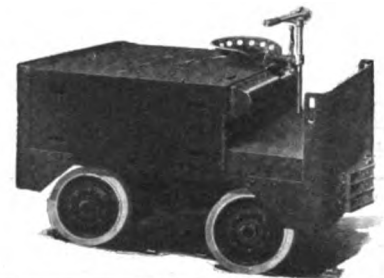
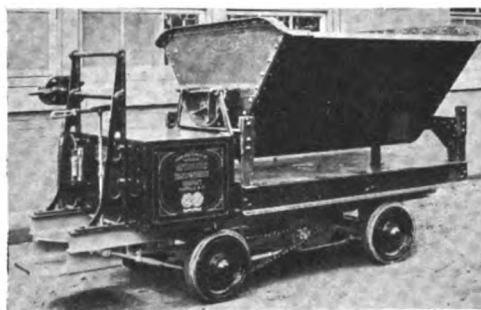
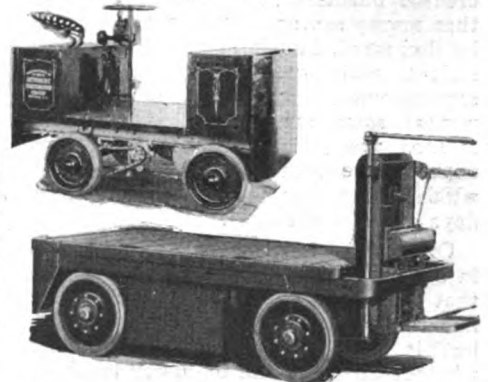
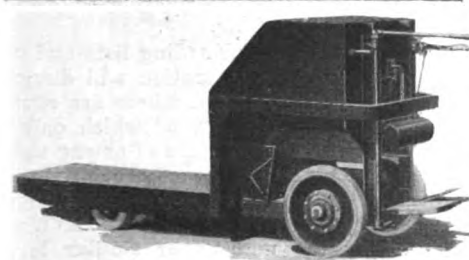
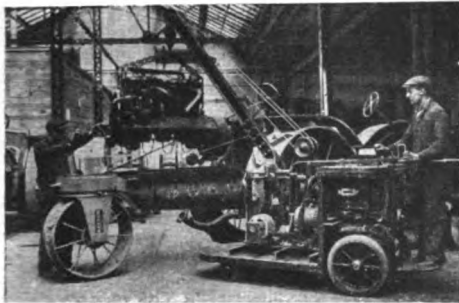
There are 27 companies producing these products, some of which, of course, are larger than others, much the same as in the motor car and truck field.

The leaders have increased their business an average of 65 per cent a year, and the possibilities are great. Right now it is estimated that there is a field for the immediate sale of 275,000 of these vehicles, which is the practical equivalent of the estimated motor truck business of the calendar year 1918.

The vehicles that contain power plants sell for around \$1,700 and \$2,000. The profit for the dealer is, or may be, 30 per cent or better, which is a highly satisfactory profit as automotive profits go.



## *Types of Industrial Tractors, Trailers and Trucks*



*The tractors are small, compact units for towing only. The trailers are varied forms of little wagons that hitch on behind. In some cases existing trailers can be used, as in the case of railway baggage carts. The trucks contain their own motive power and various forms of body, just as regular motor trucks have various bodies for different work*

This means a gross profit of \$600 on a \$2,000 tractor or truck.

There is a great economic need for these vehicles. They are wonderful labor savers where properly installed. Of course, as in the case of the car and truck, there are places where they never should be used—and there are thousands of places where they ought to be in use to-day. Girls are able to drive them—and do.

As in the case of the motor truck and farm tractor, the sales argument is increased business and production rather than money saving. Of course, costs will be decreased, but it is not always possible to make good on this claim with any automotive apparatus. The fundamental sales argument should be increased production and the release of unproductive men for productive labor, which is an important point in these days of labor shortage.

Of course, after the vehicles have been in use for some time the user often finds that his costs have greatly decreased, and these facts may be cited in selling, but it is difficult to tell beforehand whether an industrial or motor truck or farm tractor will decrease the gross expense. Increased production, however, is generally a certainty. Incidentally the initial investment is small compared with the results obtained.

These products are susceptible to national distribution. They are not something that must be confined to the large cities. Of course, as in the case of cars and motor trucks, the big cities furnish more concentrated markets, but a small town with good industries is an excellent market for the industrial truck, tractor and trailer.

The degree to which a prospect is salable depends upon:

- 1—The length of haul in and about his plant.
- 2—The amount of trucking required.
- 3—The quantity of material to be handled.
- 4—The speed required in transfer.

The prospect-list, printed in the center column, shows only partially the field in which the vehicles may be sold. It is indicative of types rather than an enumeration. Here follow sample buyers, the list being compiled from those already using the vehicles. Addresses are given in some cases to indicate the small size of town where sales may be made:

### Those Who Have Bought

Adams Express Co.  
American Agricultural Chemical Co.  
American Express Co.  
American Sheet & Tin Plate Co.  
American Steel & Wire Co.  
Anderson Electric Car Co.  
Atlantic Coast Line Railroad.  
Baltimore & Ohio Railroad.  
Bloch Bros. Tobacco Co., Wheeling, W. Va.  
Bristol Brass Co., Forestville, Conn.

### List of Prospects

HERE follows a list of businesses and trades in which are many fine prospects for these vehicles.

Automobiles, accessories and parts.  
Brick.  
Building material.  
Cement.  
Cotton, including spinning mills.  
Department stores.  
Express companies.  
Furniture factories.  
Glass.  
Iron and steel, including foundries and steel construction companies.  
Leather.  
Lumber.  
Machinery.  
Mail order houses.  
Oil.  
Packers.  
Paint.  
Paper.  
Railroads.  
Rubber.  
Smelters.  
Soap.  
Warehouses.  
Jobbers.

B. C. Sugar Ref. Co., Vancouver, B. C.  
Buick Motor Co., Flint, Mich.  
Canadian Fairbanks-Morse Co.  
Canadian Pacific Railway.  
Chicago, Burlington & Quincy Railway.  
Chicago Cold Storage Warehouse Co.  
Chicago & Northwestern Railway.  
Deere & Co., Moline, Ill.  
Firestone Tire & Rubber Co., Akron.  
Fisk Rubber Co., Chicopee Falls, Mass.  
Ford Motor Co.  
General Electric Co., Schenectady, N. Y.  
Goodyear Tire & Rubber Co., Akron.  
Great Central Railway, London, England.  
Kissel Motor Car Co., Hartford, Wis.  
Lake Erie Iron Co.  
Link Belt Co.  
Macbeth-Evans Glass Co., Charleroi, Pa.  
Maxwell Motor Co.  
National Tube Co., McKeesport, Pa.  
Newport News Shipbuilding & Dry Dock Co., Newport News, Va.  
New York Airbrake Co., Watertown, N. Y.  
Norfolk Navy Yard, Norfolk, Va.  
Page Woven Wire Fence Co., Monessen, Pa.  
Peerless Motor Car Co.

Pennsylvania Railroad.  
Pittsburgh Plate Glass Co.  
Post Office, St. Louis.  
Pullman Co.  
Remington Arms-Union Metallic Cartridge Co.  
Steel Products Co.  
Studebaker Corp.  
Treasury Dept., Bureau of Engraving and Printing, Washington, D. C.  
U. S. Radiator Corp., Geneva, N. Y.  
Wells-Fargo Express Co.  
Westinghouse Electric & Mfg. Co.  
Willys-Overland Co.  
Youngstown Sheet & Tube Co., Youngstown, Ohio.

A study of the preceding lists and the use of a little imagination will disclose wonderful possibilities. There are countless lines of business, of which only a few are mentioned here, and among those mentioned there are only one tobacco company, one glass company, one sugar company and one warehouse. Multiply these by the number of similar large businesses and the list of prospects becomes big. The same applies to all the other lines in the list.

As for imagination, that will be one of the big assets of the dealer who sells these vehicles, for one of his principal jobs will be thinking up people who ought to use his wares. Selling will be a mere follow-up.

The vehicles may be used with or without rails. The railless field is greater.

Present distribution, such as it is, is through what might be called agent scouts. These men have generally an office. When a prospect is secured the agent sends for a demonstrator and arranges a demonstration, all of which is costly as compared with selling through a dealer who is always on the job and equipped with a demonstrator and the other necessary sales material and machinery.

To cite a few examples of satisfied users:

User A—Reduced cost of freight handling on river piers from 33 to 20 and 23 cents per ton. Increase of 33 per cent in amount of freight handled. Men finish work 15 to 20 min. before closing hour. Teams are eliminated from the piers.

User B—Work greatly speeded up.

User C—Saves from \$5 to \$7 a day.

User D—Formerly had 86 men. Now has 53. Does same amount of work.

The field is going to be big.

The manufacturer is going to need distribution.

The dealer is going to need the business.

So the combination is advantageous to user, maker and seller.

It is a new thought for dealers, but that should not hold any back, for in these days unusual thoughts are usual thoughts and their thinkers are the leaders to-day—and to-morrow.

# Sell the Prospect Transportation

## THEN HE'LL BUY YOUR TRUCK

By Ray W. Sherman

"THESE darned dubs don't know they're alive," declared Eddie June, truck salesman for C. J. Reilly, Inc., which was getting its weapons ready to make a killing in the Callawassa territory with the Sayanna truck.

"What's the matter now?" asked Reilly.

"Aw," blurted June, "you go to one of these prospects and try to talk to him, and all you can get out of him is that he isn't interested in Sayanna trucks. He says he doesn't want to see you—and he won't see you. I walked in on one guy who wouldn't see me and gave him a piece of my mind—"

"Did you have much left?"

"Well—quite a lot—for some of these guys," was June's pettish reply.

"And did you sell him a truck?"

"No."

"Do you expect to sell him a truck?"

"I'm afraid not."

"Then you aired your disposition and didn't get anything for it. Is that right?"

June couldn't deny but that this about summed up the situation.

"You mustn't get peeved at these prospects who won't see you and who say they are not interested in the Sayanna truck!" Reilly declared. "Of course they're not interested. If they were, we wouldn't need you as much as we do."

### Needs a New "Slant" on Business

"You've been selling passenger cars so long you have the wrong slant on this business. Selling trucks isn't like selling passenger cars. Everybody wants a passenger car. All you've got to do is find whether he can buy it and then show him yours is the car he wants. But in trucks there are thousands of people who don't know they need them, and so you mustn't be peeved when they tell you they don't care to see you."

"But they do need them!" declared June.

"Sure they do!" Reilly agreed. "If they didn't we wouldn't try to sell them. And that's where your job comes in. You're the missionary man who must show them first that they need trucks—and then show them that ours are the trucks they need."

"But they won't see me!" declared June.

"Why should a man waste his time talking to you when he isn't interested in what you are selling?" Reilly asked. "You must find a way to see him, even if it takes you weeks to get in to see him. Of course, we can help you at this end

by circularizing him, but, even then, you will have to make many trips and fight many battles before you get to some of these prospects.

"Where were you this morning?"

"Down to see Belkey, the manager of the milk company."

"Well, probably he thinks he can't use trucks. And maybe he can't. It's up to you to find out. When he thinks of trucks he probably thinks of a lot of gasoline delivery wagons carrying milk around from door to door, and he certainly can do that better with horses than with trucks. His horses are so trained that they go over the routes without being touched by the driver, and all the milkman has to do is run from door to door and concentrate on his delivering."

"But I happen to know a little about this milk company, and I am sure Belkey can use at least one truck. He runs out eight miles every afternoon to the country for a load of milk and has one other team that draws ice and does other heavy work around the place. I'm sure one truck could do all that work—and then some. But Belkey hasn't analyzed his business far enough to understand how a truck could be made to fit in—and so he says he isn't interested in the Sayanna truck and he won't see you."

"Now, what you must do is something like this: You must get next to some of the men down at the place and find out what heavy work is being done by horses and about what times of day it has to be done. You must then determine what size of truck he would need to replace the horses. You must figure out a schedule of work for the truck and be able to answer all his arguments when he starts to tell you why it can't be done. You must be able to cite figures on comparative operating costs and show what things the truck can do that the horses are not doing now."

"The milk company owns a farm, and has horses out there. There ought to be some things the truck could do at the farm to supplement its regular work at the milk company's establishment in the city. It might even permit the farm to expand its business. There are all sorts of possibilities in the situation."

"Having determined these things, you can go to Belkey to talk about his upkeep costs and transportation problem instead of about the Sayanna truck. And when you talk with him remind him that he may need something that you don't sell, and that if such is the case you are ready to advise him to that effect. If you go in to talk about his problems instead of about our merchandise, and if our co-

operation by mail from this end fits in along the same lines, you have some chance of landing his order, but if you merely walk up to his window and yell, 'Want to buy a truck?' he'll say 'No!' right off the bat."

"Maybe that's right," said June.

"I know it's right!" Reilly declared.

"Furthermore, don't forget this: You must not let the sales opposition get your goat. You must never get peeved at the truck prospect who won't see you. You must never scowl at the girl or boy at the office gate, and you must never bawl a man out merely because you feel sore at him. You should never bawl a man out unless you do it deliberately to effect a result that you are moderately sure will follow."

### "You've Got to Smile."

"You've got to be a darned sight bigger smiler in this truck business than you ever had to be in the passenger car business. It is full of bumps and bruises, and there is every temptation to lose your temper and fly up in the air. But you can't do it."

"You've got to smile all the time—even when it hurts. You're going to be mixed up in facts, figures and analyses and all sorts of unsentimental affairs. It's not like the old passenger car business, where the car rolled smoothly over the road, saved time for the man and added to his health and joy of living. It's a different breed of animal, even if the exteriors sometimes look the same."

"In passenger car selling we didn't have to do so much preliminary work before we got near the sale. But with this truck we have to get all set on the proposition before we can talk about it. In the recreation use of cars the situation of the prospect is about the same in all cases. In business uses it didn't vary a great deal, so we could walk right in and begin an intelligent argument without much investigation. Furthermore, the man had seen so many other cars in use that he was partly sold on the idea before we got to him."

"But every prospect for a truck is a different case, unless his business is much like that of some other man we have sold. The trucks do different things in different ways, and the prospect is buying as an investment only. It means a lot of hard work, rebuffs, investigation and plugging—and smiling all the time—but the rewards are big and worth while. So smile a little, June, even if it hurts—and go back farther for the run before you try to jump to the dotted line."

## *An Investigator's Report*

*IN Williamsport automobile accessories are not carried by the department stores, but are to be found in places where they would hardly be expected. The list below illustrates this statement:*

*Drug Stores  
Garages*

*Cigar Stores*

*Hardware Stores  
Accessory Shops*

*By far the best place to buy accessories in Williamsport is an exclusive accessory shop which handles nothing but parts, tools, greases, polishes, oils and similar lines. This shop has no repair department, has nothing to do with cars, simply specializing in the sale of lines mentioned.*

*The hardware stores are strong for the automobile accessory and tire line and an interview with Mr. Lieb of A. W. Lieb Co. brought out the information that there had been a gradual growth of the accessory line in the hardware stores of Williamsport. He attributed this to the fact that hardware stores have superior display and selling facilities, and also to the fact that the hardware man is a better retail salesman than the garage mechanic.*

*A number of automobile garages in Williamsport carry scanty supplies, specializing in the sale of new and used cars and repair work.*

*Although I tried every one of the numerous garages I could not get a single used car, and upon visiting them I found them all very busy on repair work. They did not show the anxiety to make a sale that would characterize an establishment that needed business, and every bit of evidence pointed to much activity in business.*

# Is the Jobber Ever Unfair?

*Does He Create Competitors for His Dealers?  
—Has He a Moral Right to Do So?*

**I**N an effort to ascertain certain information for the merchandisers of various goods an investigator connected with the U. P. C. Research Bureau, which is allied with Motor World, made a trip to Williamsport, Pa.

He wanted to know how certain forms of advertising affect certain goods; how dealers handle certain lines; why people buy certain merchandise, and whether there are changes taking place in the distribution of products.

Among the articles under investigation was automotive equipment—or, what we used to call accessories.

He selected Williamsport because it is a good sample of a typical city, having varied businesses, varied population and being in the center of a trade zone of its own.

Without going into all the other details of his report, a part of it, relating to automotive equipment, is printed at the top of this page. It shows that equipment is being sold in drug stores, cigar stores and hardware stores as well as in garages and special stores for this business.

### Is It the Right Place?

That is all this story is going to say about the investigator and his report. The remainder of the story has to do with the how and why of the selling of automotive equipment in such strange places as drug stores and cigar stores.

Let us begin by asserting that the man who thinks of equipment for his car should logically think of an automotive establishment as the place to get it—and he will do so until he is taught by experience that he can get these goods in other places.

He will look for equipment in a garage or equipment store until he has seen it day after day in a cigar store, just as

he used to think of going to a cigar store or saloon or hotel for cigars until he found them day after day thrust into his face in drug stores. Now he is just as likely to go into a drug store for cigars as he is for drugs.

And then there is the dealer's side of the case: He would like to have the car owners of his city think of the garage or equipment store as the place to buy supplies for the car. He would like to see as few dealers as possible, because the fewer the dealers the more business each dealer can have—within certain limits. The dealer is likely to feel that his trade should not be invaded by such foreign classes as druggists and cigar men, and he is likely to ask: "How is it that these foreign trades can come in and crab my business?"

If he reasons very far he is likely to ask: "Who started these fellows in the business any way? Who sells them their goods?"

And to that question the answer will have to be made by those who sold the goods to the druggist and the cigar man.

We can, for instance, imagine such a situation as this: The jobber wishes to have as large a volume and as rapid a



turnover as possible. Therefore, he wants more business. He gets all his salesmen in, holds a rapid-fire sales meeting and shoos the bunch out on the road with instructions to see that Jobber & Co. get more business than the previous trip developed.

Exit the salesmen. One of them gets into a town. He goes around among the tradesmen. He finds some of them are aggressive and some are not. Some are good sellers and some don't sell at all. They are simply mechanics. The salesman believes the town will buy more of his goods if he can only get them before the public.

The salesman looks around. He finds several likely looking drug stores and cigar stores. He tells the proprietors a good sales story of the possibilities that lie in the sale of automotive equipment. He might put in the first stock on consignment, although the investigator doesn't say so.

And then begins the breaking down of the merchandising fabric of the automotive trade. It is no longer a trade. It is a rapidly expanding growth of unhealthy constitutional elements. Instead of building a reasonable number of healthy roots it has begun the creation of a much larger number of roots, none of which can possess a maximum of health.

Instead of a smaller number of GOOD dealers there has been created a larger number of dealers, many of whom are handling automotive equipment as a sideline and have not the equipment or knowledge to render satisfactory service or to sell intelligently.

The question then arises: Has the wholesaler of automotive equipment any moral right to create competitors for automotive dealers and break down the recognized lines of trade merchandising? Of course, he has a legal right, but legal rights are often quite at variance with moral rights.

The druggist probably isn't over keen about getting into the automotive equipment business, the dealer isn't at all anxious to see it done, and the only one who can benefit is the wholesaler—and even his benefit is only temporary, because it hardly seems logical that such tactics could create a thriving, growing business. While it may temporarily accelerate the sale of goods on the drug-

store side it must eventually slow it down on the automotive dealer side, and the slow down on the latter side will more than offset the acceleration on the other side.

Perhaps the jobber who operates along these lines may ask: "What then can I do? I MUST sell goods. The retail demand is there if it is only cultivated and taken care of. The regular dealers—the motor car men and the garagemen—are not good merchandisers. They won't sell my goods. How am I to get rid of them and increase my business?"

ONE ANSWER IS: "INSTEAD OF EXPENDING YOUR ENERGY CREATING NEW DEALERS SPEND YOUR TIME AND MONEY EDUCATING THE DEALERS THAT YOU ALREADY HAVE AND WHO FOR

YEARS HAVE BEEN THE SUPPORT OF YOUR BUSINESS. TEN GOOD DEALERS CAN SELL MORE THAN FIFTEEN POOR ONES ANY DAY."

All of which goes back to that old discussion among jobbers of the education of dealers to the possibilities that lie in the sale at retail of automotive equipment. It is the ONLY way out if the structure of the trade is to be preserved.

And instead of merely urging the salesman to SELL MORE GOODS teach him how to TEACH THE DEALER TO SELL MORE.

Then the restriction of distribution will be removed and there will result a clearly defined and strong merchandising structure. The trade will be a trade and not an aggregation of loose and ineffective units.

## Uncle Sam Sounds Call for Overseas Mechanics

*Men With Mechanical Training Wanted as Teachers—Will Be Given Commissions and Paid Officers' Compensation*

THE call for national service has been sounded for mechanics, superintendents and foremen in the mechanical trades to qualify as officers in the Ordnance Department of the United States Army.

In order that full recognition shall be given to the men who have acquired this highly mechanical knowledge, and know how to apply it and direct men intelligently, the commissions of captain, first lieutenant and second lieutenant will be granted, with corresponding pay and privileges.

The Ordnance Officers Examining Board will hold examinations in the following cities: Cleveland, Aug. 19 and 20; Detroit, Aug. 21 and 22; Chicago, Aug. 23 and 24; St. Paul, Aug. 26; Minneapolis, Aug. 27; Des Moines, Aug. 28; St. Louis, Aug. 29 and 30, and Indianapolis, Aug. 31.

These officers are placed in command of the mechanical crews stationed behind the lines for quick repair of tractors, motors, guns and other fighting ordnance equipment, so that the advance of the army will not be held up. These units are of inestimable value in salvaging broken down pieces and sending them back into action. These officers will be assigned to division ammunition trains, mobile ordnance repair shops and motorized field artillery regiments.

All applicants must be over draft age and under forty years.

They must be highly skilled mechanics of shop foremen or manager type and experience, men who have had considerable practical automobile repair experience and who can efficiently handle men

in the shop as their actual superiors, instructing them what and how work should be done. It is necessary that they should have had actual machine shop experience.

Graduates of mechanical engineering schools without shop experience are not suitable, nor are men whose previous experience covers operation only, as they are unable to assimilate the training given by the Ordnance Department or to instruct their subordinates who make the actual repairs. It is not necessary that applicants be college graduates or members of engineering societies.

They should be practical men who understand the construction and maintenance of automobiles and tractors, and know such problems as how to time motors, how to adjust carbureters, the causes of pre-ignition, the setting of magnetos, how bearings should fit, and important points regarding key fitting for taper shafts, etc.

Applications when received will be considered on their merits, and arrangements will be made to immediately give personal consideration to such applicants as from their applications it is deemed desirable to personally examine.

All men desiring to apply and living in or near one of these cities should apply for the preliminary application blank and instructions to the office of the Military Training Camps Association stationed in each of the cities noted. Applicants living in other districts should write to C. W. Jones, War Service Exchange, 596 State, War and Navy Building, Washington, stating training and experience in mechanical lines.



And we stick another one in the old cuss next month

The editor of this department is glad to answer questions. In sending queries, always include copies of contracts, notes, etc., to which you refer.

# THE LAW

By George F. Kaiser

As It Applies to  
Dealers  
Repairmen  
Garagemen

## Must Sue to Recover

Editor Motor World: Referring to our letter of June 20, we have just discovered that you gave us an answer in the following week's issue of the Motor World. Unfortunately this did not come to the writer's attention, and from what we have been told by one of our men who read the article, we judge that you want to see the contract. We are, therefore, enclosing it herewith, and ask that you be sure to return it to us when you are through with it.

You will note that the deposit of \$200 is not acknowledged in the contract, but the — Co. does not deny having the money. They are simply holding it, trying to force us to give them an order for a truck, and have agreed to credit the \$200 against the purchase price of the truck.

You will also note that there is no forfeiture clause in the contract either.

We have written to you relative to this matter in the hope that you could suggest a way of recovering the money without going to the expense of a lawsuit.—Central Garage & Electric Supply Co., Hagerstown, Md.

Answer—There is no way that you can recover your deposit other than by lawsuit unless you can persuade the company to return it to you. I fail to see why they should not voluntarily give back your deposit to you if the facts are as you state them. The contract between you and the company is a joke, as, although you agreed to buy trucks, the number that you agreed to buy is not specified nor is the date when they are to be delivered. Put this matter in the hands of your local counsel. I see no reason why he should not be able to get this money back for you if the manufacturer is solvent. The expense of suit should not be great, as the charges of your attorney should be about 15 per cent of the amount of your claim plus a small suit fee.

## City Ordinances for Fenders

Editor Motor World: We wonder if you could answer the following questions: Do you know of any city where the local ordinance requires a fender to be used? Not a bumper, but a fender. Have you heard of any such regulation being issued in New York for motor vehicles?

Have you heard of a law being passed in New York City which prevents people from crossing the street except at the

regular street crossing? And if anybody should be injured crossing the street at an angle, not at the regular street-crossing, are they unable to sue the owner of the automobile hitting them for damages?—Asch & Co., Inc., New York, N. Y.

Answer—I do not know of any city which has a local ordinance requiring a fender to be used on motor cars. It is not unlikely, however, that there may be an ordinance of that kind somewhere in the United States. If so, it is likely that your question in Motor World will be seen by someone who will be good enough to write concerning the ordinance.

There is no law in New York City against "jay-walking." The matter of passing such an ordinance has come up from time to time but to date it has not been done. If anyone while crossing a street, at other than a regular street-crossing, is struck and injured by a motor car, the fact that he did not cross at the proper place does not bar him from instituting an action for damages. It can, however, be taken into consideration in determining whether or not he was guilty of contributory negligence.

## Releasing Property Subject to Lien

An interesting question was put to me the other day by a local Motor World subscriber. It appeared that the subscriber was in the welding business, and that some time ago two cylinder blocks were delivered to him for repairs. Labor performed and materials furnished on the first block amounted to \$27 and on the second block to \$35.

After the job was completed the owner appeared one day and asked to be allowed to take away the block on which the \$27 bill had been incurred. He stated that the remaining block could be held as security for both the accounts, so subscriber permitted him to take it away with him.

About a month later a second man appeared, who claimed to be the brother of the first man, and demanded that the remaining block be turned over to him on his paying for the labor performed and material furnished on it. When subscriber asked for payment of the other account he was advised by the second man that he had nothing to do with it. The subscriber refused to give up the block unless both bills were paid.

He inquired whether or not his lien extended to one block or to both. I advised

him that under ordinary circumstances if there were two separate jobs his lien on each block would only be for the amount of labor performed and material furnished on that particular block. As the understanding was, however, that he was to hold the second block for both bills, I advised him that he was justified in doing so unless the second man was actually able to show that he was the owner of the block on which the lien was claimed, and that the understanding that it was to be held for both bills has been made without his knowledge or consent.

This is simply another illustration of the danger of allowing property which is subject to a lien to be given up until the charges incurred have been paid in full.

## Lost Lien by Surrendering Property

In a recent Texas case it was decided that where a garage is sold and the buyer on coming into possession gets an automobile which is being held by the seller to protect his lien for repair charges, the buyer acquires no lien through the sale unless it is formally assigned to him.

In this case the suit had been instituted by a car owner to get possession of two cars, each of which was valued at \$1,500, which the buyer had refused to give up. The car owner claimed \$20 per day damages for the loss of use of each car. The court held that when the garageman voluntarily surrendered possession of the property on which he had a lien, the lien was lost, and it was not revived when the car came into his possession.

## Mechanic School for Tri-Cities

ROCK ISLAND, ILL., Aug. 8—The Tri-Cities Automobile Trade Association has decided to open a school of instruction for motor car mechanics, in order to relieve the increasing shortage in this kind of labor. So many have joined the government forces that there is a marked scarcity of first-class men in this city and vicinity. Young men who have a predilection for motor car repair work will be encouraged to join the school and, if the responses are sufficiently numerous, it is believed that there will be many valuable recruits to the industry. It will be recommended that similar schools be started in other cities of the country.

*A Department of*

# BETTER MECHANICS

No. 78

## Reo Gearbox, Driveshaft and Rear Axle

### *Special Equipment and Methods of Adjusting*

**T**HE factory service station of the Reo Motor Car Co. has developed a specialized equipment for adjusting and testing each transmission system in the shop before it is installed in the car. Though too expensive for the small shop, it is suitable for the larger service station, because by it one man can handle a larger volume of work; the parts are known to be right before installation in the car, and road tests are eliminated. The method of adjustment is given, however, whether made with the equipment or not.

#### The Rear Axle Stand

In Fig. 1 is shown the rear axle stand that has been developed for the preliminary assembly and adjustment. It consists of a cast-iron upright, having a mushroom base securely bolted to the floor, in which is carried the axle support, also cast iron, and molded to exactly fit the under side of the rear axle housing.

The housing is held securely in the support by semi-circular disks cut away to engage the axle and housing flanges, being held in place by steel clamps locked through steel cam levers. Steel supports are attached to the stand for holding the torque arm and drive-shaft in a horizontal position.

The following are the features of this stand, differentiating it from the ordinary type of stand:

1—The axle is held at a height that permits the workman to work from a standing position, and may be adjusted to the workman's height.

2—No part of the stand interferes with the workman's movements in making the adjustments.

3—The axle may be quickly locked in place by the semi-circular disks and cam-levers, and as quickly removed. By being locked in place the workman may pound, pry or fit the parts without shifting the position of the axle.

4—One man can do the assembly work.

#### The Adjusting and Testing Equipment

In Fig. 2 is shown the equipment used in adjusting and testing the gearbox and rear axle. The principle employed is simple, and practically reproduces the

action of the parts when in service on the car, except that an electric motor replaces the engine and a generator takes the place of the road resistance. The advantage is that all parts are accessible and necessary adjustments may be made and checked quickly, with assurance that they are finally right before the part is installed.

The gearbox is clamped on a steel support that is a duplicate of the supports on the car frame, except that attachment is quickly made through T-handled bolts and crank-operated screws. The speedometer is a part of the stand, and is driven in the usual manner from a gear at the rear of the gearbox.

In a similar manner the rear axle assembly, minus the rear wheels, is clamped to cast-iron supports, so placed that the drive-shaft may be connected to the gearbox and the torque arm attached to an extension on the gearbox support. Quick-acting hinge-clamps and

temporary pins are likewise used here, so that no time will be lost in setting the apparatus up.

Large wooden pulley wheels are used instead of the regulation rear wheels, and from these the drive is carried by a belt to the overhead generator shaft. These wheels have, however, the regulation brake drums, so that the brake band adjustment and action may be adjusted with the rest of the drive system.

The wiring to the driving motors and the generators are carried to a central control panel, where, through the usual rheostats, etc., the speed of the driving motor and the load on the driven generator may be regulated to any desired amount, and the effect of a low speed with heavy load, or high speed with light load, or any desired combination of load and speed obtained by simply regulating the motor and generator balance. Not only may the parts be adjusted for quiet action under all conditions, but by noting

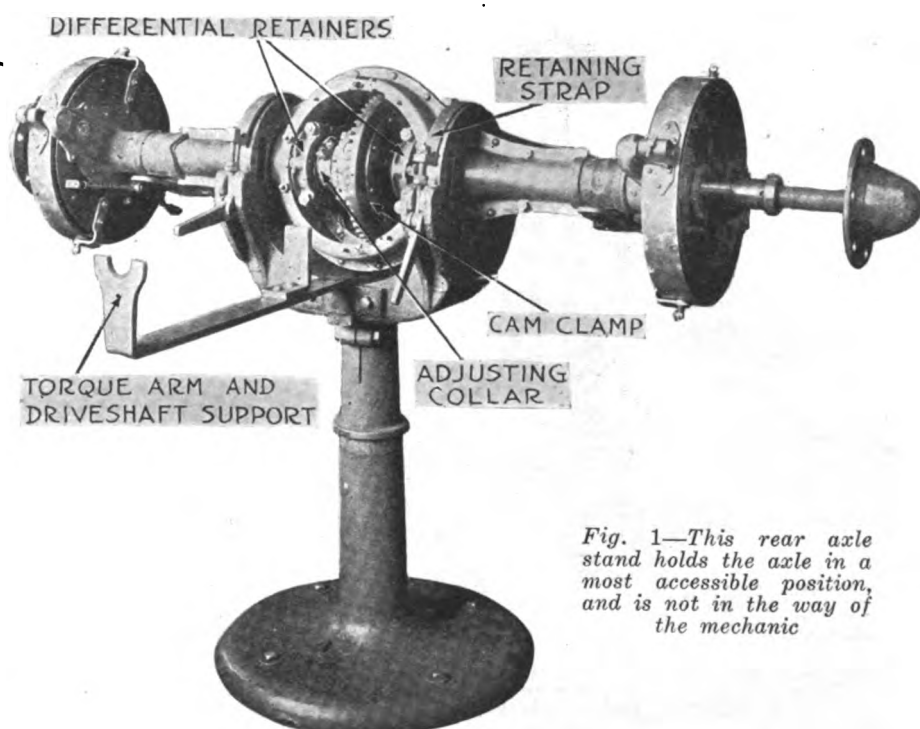


Fig. 1—This rear axle stand holds the axle in a most accessible position, and is not in the way of the mechanic

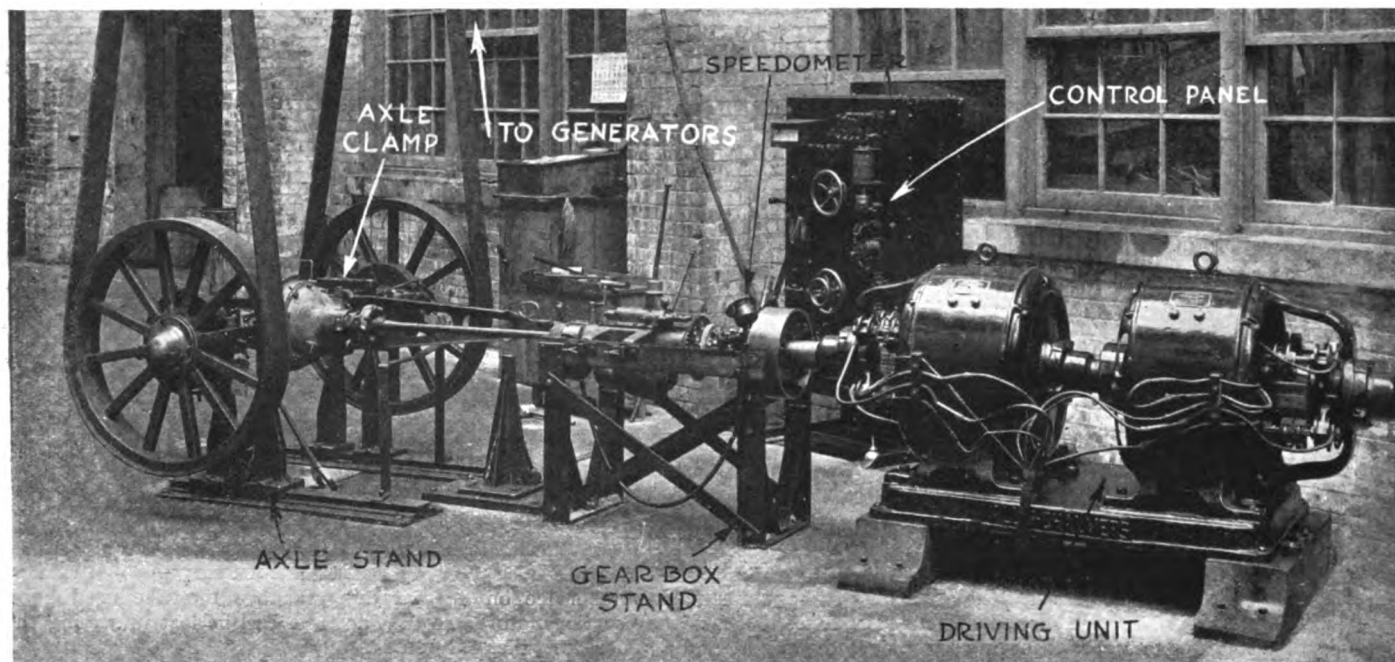


Fig. 2—The entire driving system is tested and adjusted before installation in the car, an electric motor taking the place of the engine, and a dynamo applying the load. Note that the parts are designed so the units may be dropped and clamped in place

the power required by the motor, and the power delivered at the rear wheels, any great loss of power through friction, etc., can be noted, located and the required changes made.

In obtaining a new adjustment, after overhauling the axle or replacement of new parts, quiet operation is the test. Likewise in service, if the axle becomes noisy, either intermittently or constantly, adjustment should be attempted, and if not effective the axle should be removed and overhauled.

To remove the axle from the car it is only necessary to suspend the rear of the car from the floor, disconnect the

forward drive-shaft universal and torque arm, together with the brake rods, and after the straps holding the springs to the axle are removed the axle may be rolled from place. It is then placed on the rear axle stand, as shown on page 23, in Fig. 1.

#### Removing the Wheels\*

This rear axle is of the full floating type, the driving flanges being the hub

\*This applies to the six cylinder model. On the four, the rear wheel bearings are plain roller. Instead of taper, and hence have no adjustment.

caps and bolted to the wheels, see Fig. 3. The first step, therefore, is:

- 1—Remove the nuts holding the rear axle flange or hub cap to the wheel.
- 2—Remove the flange, together with the axle shaft.
- 3—Remove the set-screw in the rear wheel adjusting collar.
- 4—Remove the adjusting collar.
- 5—Pull the wheel from the axle.

#### Removing the Differential Assembly

This is held in place by two straps, clearly shown in Fig. 1, and is removed as follows:

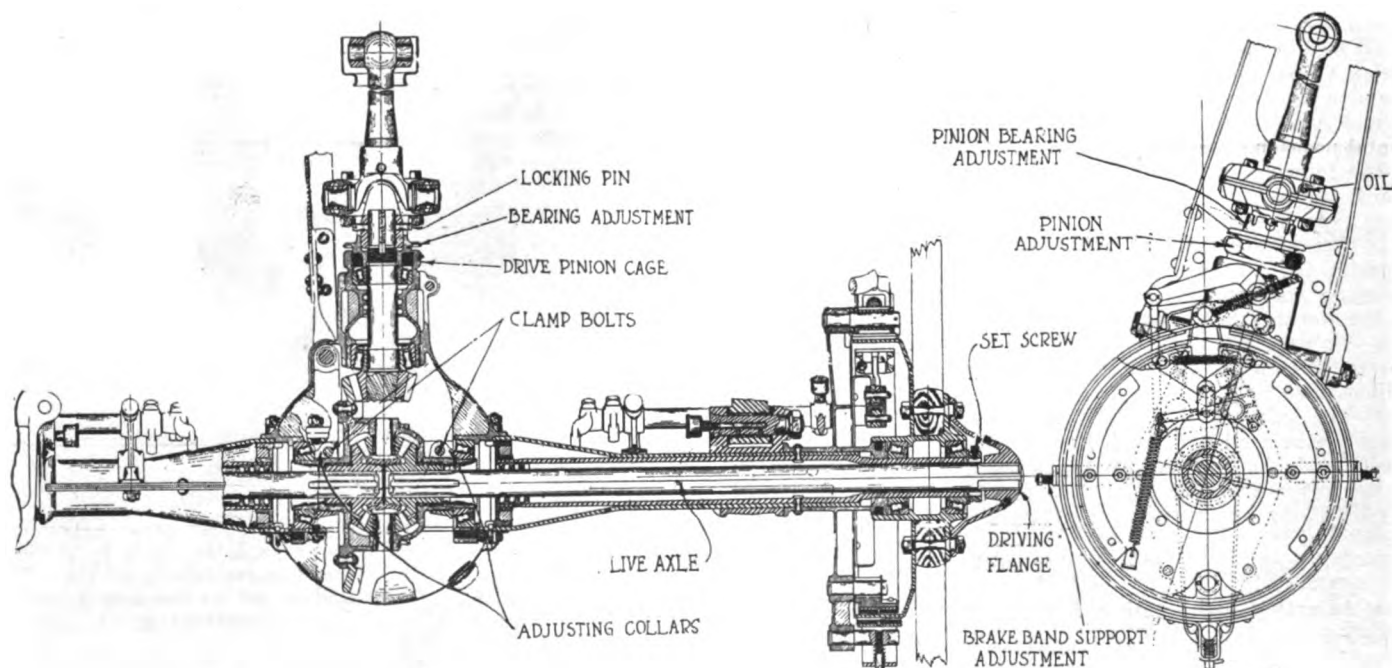


Fig. 3—Whether making the adjustments by the aid of special equipment, or with the axle in the car, the method is the same. The points of adjustment are shown above



1—Removing the nuts holding the differential housing cover in place and remove the housing cover.

2—If the axle shafts are not removed, draw them out from their engagement with the differential unit, as shown in Fig. 1.

3—Remove the differential straps and lift the unit from place.

The unit may then be cleaned, inspected, and any broken, worn or chipped parts noted. The interior of the housing, likewise, should be washed out with kerosene.

#### Removing the Drive Pinion Assembly

The cage holding the drive pinion, shaft and bearings may be removed after removing the rear universal by loosening the clamp nut and screwing the drive pinion cage from place. The locking pin and bearing adjustment, shown in Fig. 3, are next removed, permitting the pinion shaft to be taken out and the bearings washed and inspected.

#### The Assembly

The assembly of the drive pinion cage and the differential unit is the reverse of the tearing down, the main points to be noted being in the adjustment of

the taper roller bearings and in the meshing of the pinion and ring gears. Noisy gears are usually caused by improper meshing adjustment, providing the gears run true, and this can be removed by the following adjustments:

1—The Pinion Gear—This may be moved forward or backward after loosening the clamp nut shown in Fig. 3, and then turning the drive pinion cage in or out.

2—The Ring Gear—By unloosening the clamp bolts shown in Fig. 3 the threaded adjusting collars may be turned to allow the ring gear and differential to be shifted sideways in either direction.

The pinion and ring gears should be meshed with a barely perceptible amount of backlash, and all Timken bearing adjustments should be set up so that a slight amount of play is present. Still maintaining a slight amount of backlash between the gears, final adjustment should be made till the quietest position when running is obtained—either on the testing apparatus or in the car under actual operation.

#### Brake Adjustment

The clearance between the brake bands and the drum should be  $\frac{1}{16}$  in. all

around, this being obtained by the adjustments shown in Fig. 3. The rods are adjusted as follows on assembly in the car:

1—Place both pedals as far back toward the drivers' seats as the slots will allow.

2—Shorten or lengthen the rods connecting the pedals with the brake levers by the adjustment at the front of the rods. They should be of such a length as to allow the pedals to be pushed forward to the limit of the pedal slots before the operating arm strikes the rear battery support cross member.

3—If the pedals strike the ends of the slots before applying the brakes, shorten the cables connecting the operating levers on the rear battery support cross member to the levers on the rear axle. This is done by turning the connections on either end after removing their pin connections to the levers, and the adjustments should be so made that the brakes are applied evenly on both wheels. This condition may be determined by jacking both wheels from the floor, applying the brakes one notch at a time, and seeing if about the same amount of force is required to turn each. Or a road test may be made.

## Installing a Delco-Light Demonstrating Plant

**A** DELCO-LIGHT farm lighting and power plant mounted on a wooden frame which in turn rests on springs makes an ideal demonstrating outfit for the office or salesroom. A distinct advantage of this installation over the ordinary concrete base is that the wooden base when mounted on the springs can be fastened to the floor of the building, and the springs will absorb all the vibration when the plant is running, none being communicated to the building.

Where a concrete base is used in an office or salesroom it is often necessary to run this base down to the floor of the basement under the building. The frame mounted on springs attains the same object at less expense and trouble.

The springs and plates are stocked by the service department of the Domestic Engineering Co., Dayton, Ohio, and are sold to members of the Delco-Light sales organization at \$10 per set net. They can be made locally by any spring manufacturer or good blacksmith, and the diagram shown in Fig. 2 gives the dimensions that have been found best suited to the purpose. The spring is made of  $\frac{1}{2}$ -in. round steel spring steel with the top and bottom coils closed and then ground off at a true right angle. The distance "A" in the drawing should be  $4\frac{3}{4}$  in.

Fig. 3 is a bottom view of the wooden base and shows all dimensions in inches. The location of the spring plates and of the bolt holes for the plant is also

indicated. This frame should be made of 5 x 5-in. stock, mortised and pinned together.

The remaining four plates are to be attached to the floor under the springs. The four springs hold the weight of the plant and the base when the installation is made. The wooden bases had best be made by a carpenter, and should be carefully squared at the joints and draw pinned so that the tenons will pull tight into the mortises, making a strong immovable frame that will not work loose after it has been used some time.

The exhaust can be piped outside by flexible tubing if desired to make a neat job. Ordinary pipe will do provided allowance is made for the pipe to give with the action of the springs.

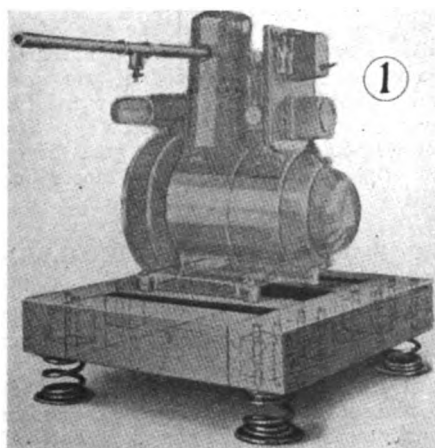


Fig. 1—Delco-Light Plant installed on spring-supported frame for demonstrating

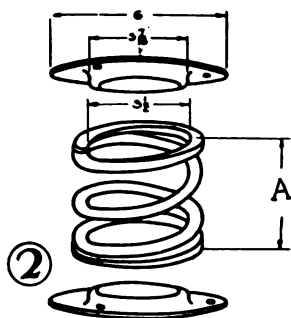


Fig. 2—The spring is of  $\frac{1}{2}$ -in. round spring steel. A is  $4\frac{3}{4}$  in.

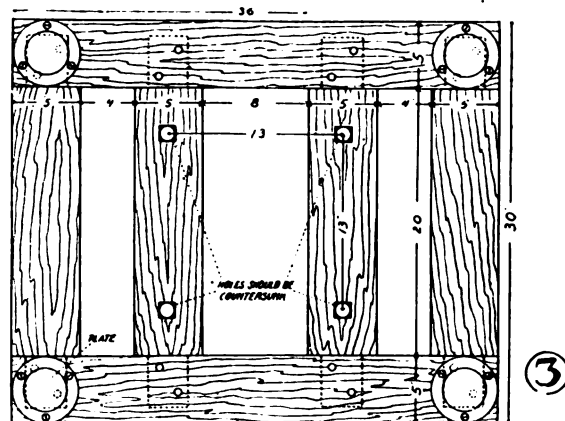


Fig. 3—Construction and dimensions of the wooden frame and the position the springs occupy

# Repairshop Shortcuts

*From Motor World Mechanics*

## No. 1483—REMEDY FOR LOOSE FORD SPOKES

Loose spokes in Ford wheels are tightened by driving a piece of galvanized iron or tin between every other spoke at the hub, forming a wedge. The pieces of metal are cut to a size 2 x 1½ in., which is correct for Ford wheels. The cause of the looseness is the drying out of the wood, causing it to shrink, and thus forming openings between the spokes. The pieces of metal make up for the shrinkage and make the wheels tight again.—Pacific Garage, Centralia, Wash.

## No. 1484—PLIERS FOR PULLING OFF TIRE FABRIC

A tool for pulling off fabric from a section of a casing which is being torn down is made from a pair of 6-in. carpenter's pliers. Teeth are filed in the jaws to get a grip on the fabric and the handles are wrapped with electrical tape to give a good grip. This tool will give a good hold without tearing or cutting the material.—G. Mark Piper, Good Bros., Bloomington, Ill.

## No. 1485—HANDY AIR VALVE FOR TUBE-TESTING TANK

A convenient and quick-acting air valve for use in connection with a tube-testing tank is so constructed that it can be operated with the foot, thus turning on or shutting off the air while the workman's hands are free to manipulate the tube in the tank. The air is piped close to the tank so that the pipe sticks up at least level with the top of the tank. A valve is screwed on the end of the pipe and the hand wheel of the valve is removed and replaced with a piece of strap iron about 6 in. long with a square hole in the center to fit the stem. The two ends of the strap are drilled and a spring is attached to one end and a wire to a hinged foot board to the other end. When the board is pushed down the valve opens and when it is released the spring closes the valve.—G. Mark Piper, Good Bros., Bloomington, Ill.

## No. 1486—A SAFETY-FIRST WHEEL CHOCK

A wheel chock to prevent cars from rocking off jacks is made from two pieces of wood and an adjustable strap connection. The wooden pieces are 5 in. square and 18 in. long, beveled off at an angle of 45 deg. The pieces are connected with two iron straps with one hole in one end of each and a series of

## Make a Dollar

*HOW often have you been compelled to rack your brain to overcome some difficulty? But when you did find a solution—what satisfaction it was! Well, here's a chance for you to dig some of those life-savers out of their hiding places and put them to work for your fellow-craftsmen. Send them to Motor World. We will pay you a dollar for every one accepted for publication.*

*The only requirements are these:*

*1—Describe the shortcut briefly but clearly, in few words.*

*2—Send a sketch, in pencil or pen, no matter how rough; our artists will finish the job.*

*3—Write on ONE side of the paper only.*

*4—Sign your name and initials, the name of the company you are with, and the town.*

*Write plainly. If your name is unusual, print it in capital letters.*

holes in the other end of each. A hole is drilled in each block. In one of the blocks a bolt goes through the ends of the straps with the single hole and is fastened with a nut. A threaded rod with thumb nuts goes through the hole in the other block so that the side straps can be removed to make a change.—M. Gerard, Jr., Soderberg Garage, Galva, Ill.

## No. 1487—EMERY-WHEEL STAND FROM A PISTON

An emery-wheel stand is made from a piston by sawing or grinding away the bottom and sides, leaving the piston-pin bosses, the top and a part of the side

walls. A wooden pulley is turned up and a set-screw holds it to the piston pin. The oil hole can be threaded to take the set-screw. A rod threaded on both ends goes through the piston pin and nuts hold the wheels in position. Holes drilled through the top of the piston enable it to be screwed to the bench. A hole is drilled in each boss for oiling.—G. Mark Piper, Good Bros., Bloomington, Ill.

## No. 1488—ASSEMBLING FORD FRONT SPRINGS

Ford front springs are quickly and easily assembled without the use of a vise or clamps by placing the leaves so that they do not line up and inserting the tie bolt. The nut is screwed down while the leaves are in this position and the leaves can be easily shifted to place, one at a time.—Robert B. Murphy, Ford Motor Co., Detroit.

## No. 1489—REPAIR OF A GASOLINE FILLING HOSE

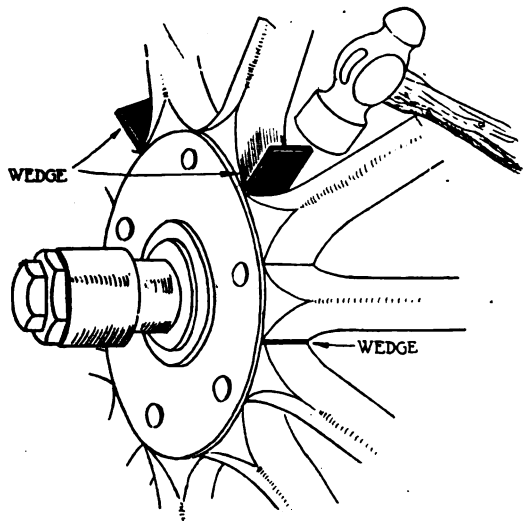
A gasoline filling hose which is worn out through the rubber rotting where the hose is fastened to the filling nozzle is repaired and made to give more service by wiring it so that the strain is taken by wires and not by the hose. Two hose clamps each are put on the nozzle and the hose and wires are run between these clamps, tending to pull them together, the wires being passed through the screws that draw the clamps together.—R. D. Martin, Martin Automobile Co., Plainfield, N. J.

## No. 1490—REMOVING FORD DIFFERENTIAL GEAR WITHOUT AN ARBOR PRESS

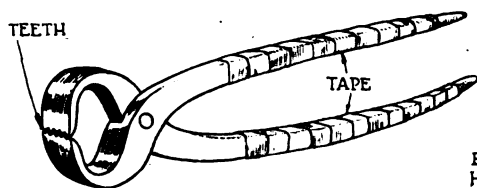
Ford differential gears are removed from the shafts without the use of an arbor press by placing an old starting-crank ratchet in the face of the gear and driving it with a hammer till the gear is below the half-moon key. The key is then removed and the gear driven off.—Robert B. Murphy, Ford Motor Co., Detroit.

## No. 1491—WEATHERPROOF GASOLINE PRICE TABLE

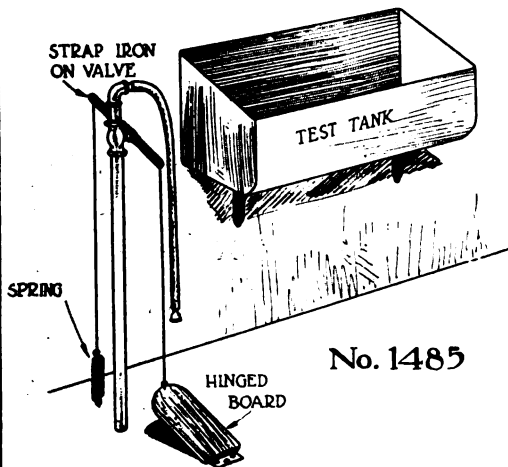
A weatherproof gasoline price table for outside gasoline pumps is made from a headlamp rim and glass. The table with the various quantities and prices is placed in back of the glass and a round piece of tin is placed in back of that. The rim is then filled with sealing wax to keep out water. It is hung on the pump with wire.—L. H. Meckstroth, New Knoxville, Ohio.



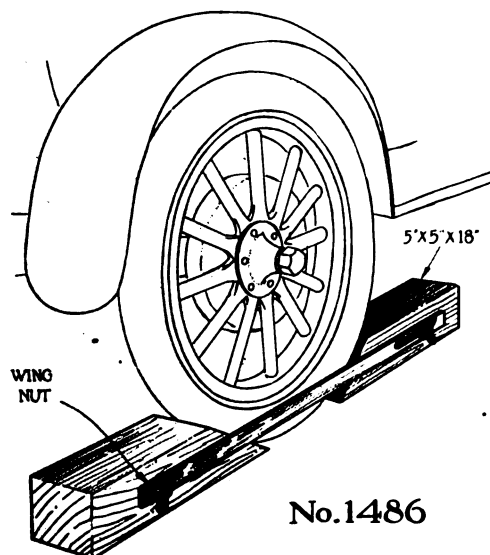
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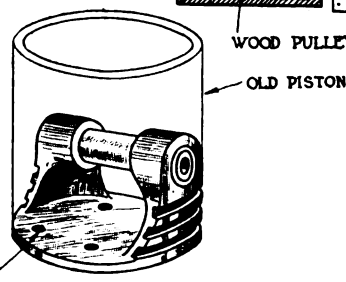
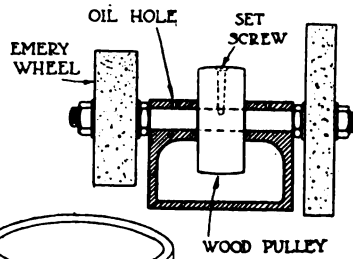
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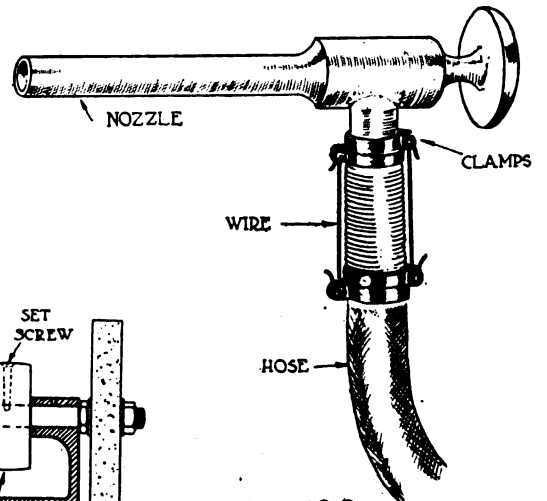
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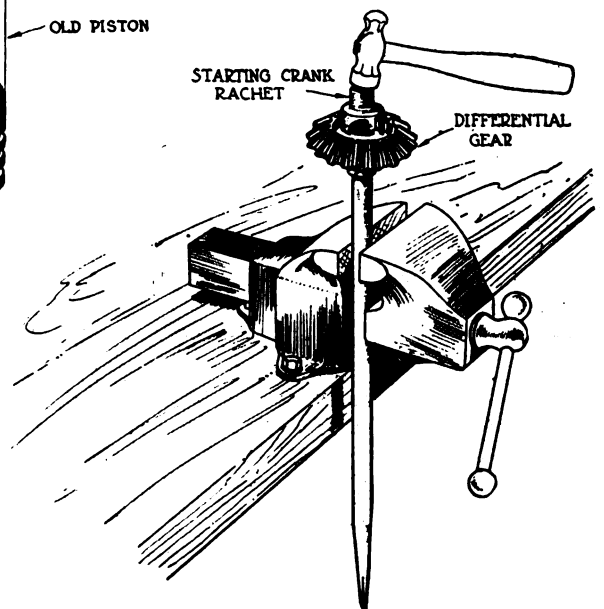
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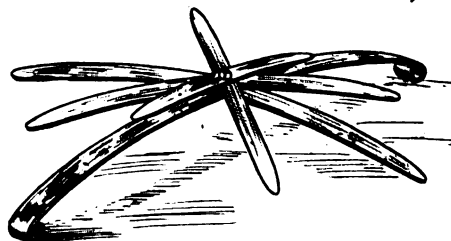
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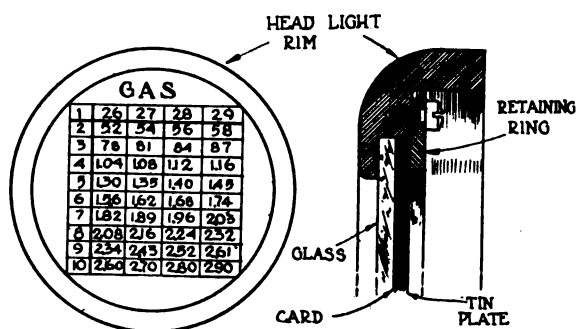
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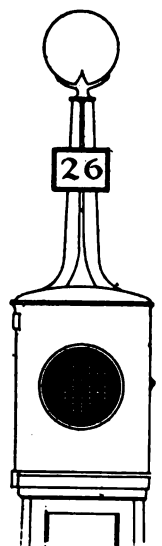
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No. 1488



No. 1491



# Editorial Observation

## Your Major Business

ONE of the greatest changes that has ever come in a merchandising trade is about to come to pass in what we have known as the passenger car business. In fact, with hundreds of dealers the change has already been made.

The startling thing about the whole situation is that few have recognized the change as one which is changing the entire face of the business of the passenger car dealer. He is now an automotive dealer. Of course, in certain sections where the dealer's business in passenger cars is so big that it runs into millions he may be justified in holding to that business only, but with the majority of dealers the passenger car will not in the future stand alone.

For months we have used the word "automotive" in describing the dealer of the future, and to many that has meant the sale of passenger cars would be supplemented by the sale of trucks, tractors, farm lighting systems and similar products. What it really means is that passenger cars will become the minor business with thousands of dealers, and that the major part of their business will center around the truck and tractor, with a goodly volume in other automotive apparatus.

This change has already been made in many cases. Right now passenger car production is at a low ebb—and it is going lower. Of course, the newspapers have said there won't be any passenger car business, but it isn't the first time the newspapers have swept the industry off the map. It is well to wait and see what really happens.

But there are dealers in the United States who don't give a hoot whether there are passenger cars made next year or not. They have already made passenger cars a side issue through necessity, and, being wide-awake and on the job, have swung into trucks and tractors with a vengeance and have revised their businesses, as Motor World long ago advised.

The dealer who has been sitting in his old-time seat at his old-time desk expecting to "get by somehow" is going to wake up some day and find himself so far behind the parade that he may have trouble catching up.

The changing situation is exemplified no better than by the change of mind among the implement people—the manufacturers and those who have had charge of the selection of tractor dealers. At one time they were dead against the motor car dealer. They maintained that the tractor business should be handled by the implement man, because he had been selling goods to the farmers for years and could best corral the business.

As for service, when the farmer wanted a part he notified the implement dealer, who in turn notified the nearest implement branch, and the branch sent a service man out to help the farmer—which was all right as long as there were few tractors in use. But with the large number of tractors that have been going into service during the last two years the old implement people, making tractors, have found that there must be better service. They have found that the motor car man is the only man who can give this service. Regarding the implement dealers, one implement sales manager said "they are dead"—and he has spent nearly twenty years with them.

Wherefore, implement people are placing their tractor agencies with motor car men, with automotive dealers. There is little use talking longer about the opposition of implement houses to the motor car man. The tractor manufacturer who sticks to the old ideas is going to lose out.

And what does it all mean? It means that the sale of farm implements is going to pass to the automotive dealer. He is going to sell plows, harrows, binders and all the rest of the line. Many of the tractor companies of to-day are only implement companies operating under a different name. Of course, there are separate factories, separate organizations and all that, but the implement companies are designing a whole line of tools to fit the tractor that the tractor company makes.

Automotive dealers are already selling farm tools. One automotive dealer last year sold seventeen threshing machines, not because he wanted to but because farmers came to him and demanded these goods. They had bought tractors, cars and trucks from him, and, liking his service and the way he did business, determined that they wanted to buy implements of him.

And trucks! There are going to be thousands of them sold to farmers. This year's estimate is about 300,000 trucks. In America there are 4,500,000 farmers who can use trucks. See what enormous possibilities there are in the business.

For years the passenger car industry rode the top wave. But of late years it has begun to lose its supremacy as a merchandising proposition so far as volume is concerned. The truck, the tractor, the farm lighting plant, the industrial truck, the industrial tractor, the farm machinery and all these things are going to give it a hard crowding.

The passenger car is like the Allied army. For years it held the line, but now it is not alone, and as weeks go by there will be a bigger army which can grow to no one knows what proportions.



## Letters from Readers

*THIS page is for the use of MOTOR WORLD readers with something to say. Letters on subjects of interest to dealers, garagemen, repairmen and jobbers are always welcome.—EDITOR.*

### Standardize Batteries

Editor Motor World: The writer has always been intensely interested in your methods promoting the various branches of the automobile industry. Taking these facts into consideration, we have decided that possibly you could offer assistance in giving the consumers the benefit of advanced ideas to be carried out by the manufacturer, dealer and garageman.

The Automobile Industrial Committee (we are not positive about this name) have been doing excellent work in connection with the automobile industry. They have been successful in having the tire sizes eliminated to about six standard sizes.

Is it not possible for you to persuade this same board to consider the storage battery industry? There are about three hundred size batteries that could be eliminated. We are enclosing a battery list and after you have given it your attention, we are certain you will agree that this industry is carried on more recklessly than the tire industry. About twelve size batteries would suffice. Would not an excessive amount of labor and material be economized yearly if this change were brought about? Furthermore, the service station which is compelled to have at least 150 size batteries on hand and then be handicapped in giving serv-

ice, as there are sizes which are not always on hand when required, would not have a large amount of capital invested, also the loss the dealer suffers due to the life of a storage battery deteriorating very rapidly.

Having had five years' experience in the sale of storage batteries, we are well posted in the consumer's difficulties in this line. We would like to give assistance, but since we are the — Battery Service Station, it would be detrimental to us. However, we know that the battery industry principle is "Prevent a competitor from keeping pace." For this reason there are changes in the storage battery each year. In order to make the competitor compete a change is made in the size or shape of the battery box, or in the diameter of the terminals. Just a trifling change prevents last year's battery being used. If this continues, in 1920 there is a probability of 1000 size batteries. Why not have the battery industry revised just as the tire industry? About a dozen size batteries would take care of the battery industry satisfactorily.

As mentioned above, we cannot make statements public due to our representing the — battery, but perhaps by an article in Motor World, with the assistance of the committee mentioned, a very complete change could be brought about

which would be welcomed by all concerned.

Please consider this matter confidential and if we can be of further assistance, we will be pleased to co-operate.

Awaiting your opinion in the matter at your earliest convenience, which is very much appreciated, we beg to remain

Yours very truly,

\_\_\_\_\_  
Manager.

### Keep Track of Batteries

Editor Motor World: Quite a number of service stations are having a very hard time keeping track of rental batteries, so we are inclosing you our system.

We have a board 4 x 4, and in rows we have a hook every 3 inches. At the top of each hook we have a number; this number is also on rental battery. On board with number is the type of battery.

When Mr. J. Jones comes in to have his battery charged we put a rental battery on Mr. Jones' car; we write his name, address, date out, and if we put a new terminal on battery leads we put this down on rental card, and if the battery given Mr. Jones was No. 42 we place card on No. 42 hook. In this way we can look over our board and tell how many batteries we have out and who has them, also the type of each.

If in three days Mr. Jones comes back for his battery, we take down rental card No. 42 and we see that he had battery out 3 days at 25c., or 75c., and that charging 75c. terminal 25c., the total bill is \$1.75.

We can say that we have not lost any batteries with this system. In case we do not know the owner and he lives in some other city, we make this owner put up \$25 deposit, and on our deposit slips we have owner sign his name, also car license and his address; we then give him a copy and we keep one. The copy that we have is put on rental bat-

FORM 293

Tag No. \_\_\_\_\_

Car License 45684-0

Rental Battery No. 49

Date Jan-10-1918

I hereby acknowledge the receipt of a battery rented to me by

Lippincott Electric Co.  
Bellefontaine Ohio

and installed in my automobile by them, which remains their property.

For the use of this battery I agree to pay 25 cents per day, from date until its return to said owner and to return the same in twenty (20) days or less from this date, in as good condition as received.

In the event that I do not return this battery as above, I promise to pay said owner on demand the sum of Twenty-Five (\$25.00) Dollars in addition to said daily charges, the said battery then to become my property.

Signed \_\_\_\_\_

By \_\_\_\_\_

### LIPPINCOTT ELECTRICAL CO.

Name J. Jones

Address City

Battery No. 42

Date In Jan 11-18

Date Out Jan 14-18

Time Out 3

Price Per Day 25c. Total \$ 75

Battery Charging 75

Remarks New terminal

25

Total \$1.75

Form used by Lippincott in keeping track of batteries

tery board and also rental card is filled out and placed on same hook.—Lippincott Electrical Co., Bellefontaine, Ohio.

### Conserve! Work Wisely!

Editor Motor World: Dealing as we do with the repairshops entirely we find they are having difficulty in impressing upon the automobile owners why delays occur and why they cannot give immediate service in their repairing. If it is at all possible it would be an advantage to both the repairer and the owner if the owner would become fully acquainted with the true conditions of the iron and steel industry with reference to automobile parts. If you can in any way help the general public on this we feel certain it would prove an advantage to the trade.

Just another thought: it occurs to the writer that never before has the automobile builder had such an opportunity to demonstrate the life of his particular make whether truck or passenger car. Never before has the public been compelled to use their automobiles in such great effort.

Automobile reputations are made or lost during this period. The future of each particular make depends upon its service to the owner. Manufacturers and dealers who provide means to keep the cars sold running insure themselves of business after the war and a reputation of having an automobile which is made to give years of service.

Thousands of dollars worth of old parts have been junked every year which could be easily repaired. Whole cylinder castings have been thrown away when they could have been reground and new oversize pistons fitted, making a far better engine.

This war will help educate the people to save time, money and material, a lesson which will be instilled into the minds of everyone and help make the American people stronger in the world.

American prestige and business prestige depend upon keeping in service not only our army and navy but also our products. The first consideration, of course, is the war, which we must win and shall win. It is well the American business man should make this idea predominate if he expects to win.—Ralph H. Ratliff, Indianapolis.

### The "Gas" Marines

Editor Motor World: Perhaps the readers of Motor World may be interested in knowing something about what the motor car is doing "over there," and especially in what can be done by even one little old flivver.

There's a little ol' flivver that's dearer than anything else in the world to the Marines who fought so bravely at Belleau Wood, now known as Bois de la Brigade des Marines.

The Devil Dogs call this diminutive war chariot Elizabeth. Armored cars and huge tanks haven't anything on her. She's served to the last wheeze, or nearly the last wheeze, for the end isn't yet.

Elizabeth sure did peeve the Germans.

Every time she appeared, the square-heads made the poor flivver a special object of their fire. She's been hit forty times.

Now Elizabeth is mostly junk and rests in a heap against a brick wall in the little square of Lucy-le-Bocage. But the Marines will patch her up in ship-shape fashion again if they have to steal parts from every automobile in France.

This is the story of the flivver as set forth by Major Frank E. Evans in a letter received from France recently:

"Elizabeth will go down in history. Not only at Quantico, Va., where I drove her, but at Bordeaux and later up in our training area, she carried everything from sick men to hardtack. Then we had two months in the trenches near Verdun, and at the end it seemed as though she would have to go to the scrap heap. Her top was entirely gone and we made a mail wagon of her. In some way the men, who have an affection for her that you can hardly comprehend, patched her together, and we brought her down to our first rest billets.

"A week later we had to go to another area 40 kilometers north of Paris, and in the long line of motor cars that made the trip Elizabeth sailed along without mishap and was the talk of the division.

"Then we came up here and she rose to the heights of her service and her record. The night we took Bouresche with twenty odd men, and news came through that others had filtered in and the town was ours, we shot a truck load of ammunition over the road. The road was under heavy shell and machine-gun fire. Later in the night we sent the flivver out with rations.

"For the next five days she made that trip night and day, and for one period ran almost every hour for thirty-six hours. She not only carried ammunition out to the men, who were less than 200 yards from the Boche, but rations and pyrotechnics, and then to the battalion on the left of the road, in those evil Belleau Woods, she carried the same, and water, which was scarce there. For these trips she had to stop on the road and the stores were then carried by hand into the ravine.

"I saw her there just after the first trip and counted twelve holes made by machine-gun bullets and shrapnel. At one time the driver, Private Fleitz and his two understudies, Haller and Bonneville, had to stop to make minor repairs; when they had a blow-out they kept right on. The Huns shelled her every time she appeared and how she and the men escaped being annihilated is a mystery.

"The last time I saw her she was resting against a stone wall in the little square of Lucy-le-Bocage, and she was the most battered object in the shell-wrecked town. One tire had been shot off, another wheel hit, her radiator hit, and there were not less than forty hits on her. We are trying in every way possible to find new parts. She is our Joan of Arc, and if it takes six old cars to make her run again we'll get those six and rob them. The men have a positive deep-seated affection for her that is touching. The service she did us just

when it was vital to get out to the fighting men ammunition, food and water can never be estimated.—Raymond J. Soat, Sergeant, U. S. M. C., New York.

[Incidentally, the Marine Corps wants men from 18 to 40, regular scrappers. Ask your postmaster where the nearest office is located.—Ed.]

### "Automotive Exposition"

Editor Motor World: I noticed your article on the "Automotive Exposition," but unfortunately our printed matter for the fall show was off the press and as usual reads "Auto Show." The idea is all right and I will use it for the winter *Automotive Exposition*.—Bart J. Ruddle, Manager Milwaukee Automobile Dealers, Inc., and Vice-President National Association of Automobile Show Managers.

### Trucks on New 325-Mile Haul

DETROIT, Aug. 9—The fleet of trucks which is going over the roads between Detroit and Indianapolis, a distance of 325 miles, is proving very efficient and profitable for the United States Tire Co. The company engaged the three trucks a few months ago as an experiment when it was necessary to move a department from here to Indianapolis. The entire machinery equipment was moved with the aid of trucks, and the work was so successful that the company decided to retain the trucks on a regular route between these points to haul tires and tubes one way and bring back fabric. Part of the experiment is the demonstration of the company's claims that pneumatic tires with which these trucks are equipped make greater speed possible and at the same time save not less than 33 1/3 per cent in gasoline and great wear and tear on the engines, as compared with trucks equipped with solid tires. The Packard 3 1/2-ton trucks are equipped with 40 x 8 pneumatics and the 1 1/2-ton has 36 x 7 tire size. The trip can be made in 17 hours, but figuring the time of loading and unloading and reloading again for the return trip, then unloading again at starting point, 5 1/2 days are consumed in making a round trip, including the time on the road. This experiment has been so successful in the belief of the company that another route will be established between Detroit and Hartford, Conn., within 30 days.

### New Detroit Dealers Welcomed at Factory

FLINT, MICH., Aug. 9—Together with several southern Michigan Dort sub-dealers members of the sales force of the Baker-Fisk Co., the new Dort distributor for the Detroit territory which has taken over the business of George W. Franklin, met with John D. Mansfield, general manager, and his staff at the factory.

### Price Dispute Results in Death

PAOLA, KAN., Aug. 9—W. C. McDowell, Ford agent at Louisburg, Kan., was shot and killed by Roy Wellman, a merchant from Kansas City, in a dispute over the price of a tire.

# The RETAIL NEWS

## PACIFIC COAST.

The "Just-Crackel Rubber Co.," successor to Akron Rubber Co. and E. Richard Just, Inc., has opened a new store at 1317-19 South Hope Street, Los Angeles, and will distribute Diamond and Goodrich trunk tires.

The Irving Motor Car Co., distributor for the Cole Aero Eight and Elgin Six, has moved into its new home at Eleventh and Flower Streets, Los Angeles.

R. E. Sherman of Pasadena has recently purchased the De Lux Tire Co.'s stock, located at 1121 South Main Street, Los Angeles.

A. L. Nichols of Los Angeles is now the proprietor of the Downey Garage, Downey, Cal.

C. L. Richeber has opened a repairshop on East Channel Street, Stockton, Cal.

Warren & Weeks Co. has purchased the Studebaker Garage at Stockton, Cal., from E. H. Naar, the transfer including the agencies for the Studebaker and Marmon cars.

L. B. Murphy has organized the Murphy-Cantrell Co., Inc., the company retaining former Oldsmobile salesrooms on North Eldorado Street, Stockton, Cal.

The Auto Exchange Co. has opened used car, tractor and tire salesrooms at 622 Tenth Street, Modesto, Cal.

L. A. Hulen and William L. Pearce have purchased the West Side Garage at Los Banos, Cal.

Andrew Matiel, Leon Morris and Thomas Alton have organized the General Tire & Rubber Co. of California and have opened tire salesrooms at 1928 Fresno Street, Fresno, Cal.

The Bottoms-Williams Motor Co. will retain its present location on Fresno Street as a used car department and has taken possession of its new building at 1330 Van Ness Avenue, where it will handle the Jordan, Mercer, Hupmobile, Velie and Hudson.

R. Merino has purchased the Economy Garage on South D Street, Madera, Cal.

E. E. Fluhart and F. D. Kendall, operating as the Valley Battery & Vulcanizing Works, have established a Willard battery service station and vulcanizing plant at 123 South C Street, Madera, Cal.

D. P. Walsh has organized a clearing house for Fresno dealers which, under the name of Fresno Auto Clearing House, maintains used car salesrooms at 717 Eye Street, Fresno, Cal.

Emiel Hansen, garage and repairshop, has moved to 612 Eye Street, Fresno, Cal.

F. K. Makita has purchased the O. K. Garage, 222 South Center Street, Stockton.

N. E. Owens has purchased a half interest in the repairshop on West Channel Street, Stockton.

Smith & Scott have opened a Ford repairshop at 145 West Channel Street, Stockton.

T. T. Cox, formerly manager of the Tiger Oil Co. in San Francisco, has established the Auto Exchange Co. at 622 Tenth Street, Modesto, Cal., and will specialize on used cars and tractors.

W. J. O'Neill Co., implement dealer at Eye and Kern Streets, Fresno, Cal., has entered the tire field with a complete stock of Pullman tires.

William R. Seldier has established the Economy Auto Wrecking House at 642 South Center Street, Stockton.

The Electric Equipment Co., distributor of U. S. L. Batteries, has opened a branch at 1922 Toulumne Street, Fresno, Cal.

Wallace C. Hood, formerly general salesmanager of the King Motor Car Co., has joined with James Foster in Foster-Hood Sales & Service Co., conducting a garage.

Geo. F. Munsa has been appointed district manager of the Thermoid Rubber Co., Chicago branch, succeeding D. O. Pohlman, deceased. Munsa represented the Thermoid company out of Kansas City in the west and southwestern states. C. F. Crowley will continue as assistant district manager.

## SOUTHWEST.

C. T. McDaniel, Lyndon, Kan., has bought the Lyndon Garage of C. E. Gardner.

M. E. Billingslea, Bartlesville, Okla., has bought the City Garage at 210 South Main Street. He will make a specialty of repair work on Buick cars.

Henry Drake, Hazelton, Kan., has taken over the Hazelton Garage.

C. H. Hunsinger, Lawrence, Kan., has completed remodeling his garage.

P. V. Winstead, Canyon, Tex., has bought the interest of John A. Wilson in the Wilson garage.

The Oakland Auto Sales Co., El Paso, Tex., has moved from 821 Mesa Avenue to the northeast corner of West San Antonio and Durango Streets.

William Hildebrand, Fort Smith, Ark., has bought the interest of Frank Carrick in the Humphrey-Collier Tire Co.

The Briscoe Motor Sales Co., St. Louis, Liberty distributor, is now located in its new quarters at 3925-27 Locust Street. The building now occupied was especially erected for the company.

C. Mason, Arcadia, Kan., has bought the interest of his partner in the firm of Mason & Walker.

Kirkland & Long, Paola, Kan., have bought the garage of Courter Bros.

N. O. Smith, Wilsey, Kan., has bought the garage of S. E. Neff.

Douglas & Rowlands, Lawrence, Kan., have bought the Tire & Electric Supply Co.

M. E. Bollington, Baxter Springs, Kan., has bought the City Garage.

Russel H. Johnson, Eldorado, Kan., has bought the garage of Bert McCullough.

Bergle Robe, Harris, Kan., has bought the interest of his partner in the garage firm of Robe & Murphy and in future will conduct the business alone.

The Woods Vulcanizing Store, Clay Center, Kan., will move soon to a new location.

C. W. Merydity & Sons Garage, Eldorado, Kan., was recently damaged by fire. They will rebuild it as insurance is adjusted.

Fred Thonen, Whiting, Kan., has bought the automobile business of Flavel Miller.

The El Dorado Tire Service Co., Eldorado, Kan., has moved from the Metropolitan Hotel annex to its permanent location at 123 West Pine.

Ed Amole, Lyons, Kan., has bought the Motor Inn from Dan Nash.

W. H. Blake, Chandler, Okla., has bought out the Cantrell Motor Co.

W. E. French, Lexington, Okla., has bought the garage of J. B. Scott.

Al Grotewell, New Florence, Mo., has bought the interest of Pearl Hart in the Hart & Young Garage.

The Bates County Motor Co., Rich Hill, Mo., has bought the J. A. Anderson Garage.

Ed Oehring, Lamar, Mo., has bought the McCrea Garage.

A. J. Kelly and Dr. Johnson, Lamar, Mo., have bought the Carlton Garage.

W. E. Bell Bethany, Mo., has bought of S. W. Gault the Interstate Tire Shop.

Scott's Garage Co., Southwest City, Mo., has bought the Dr. E. G. Croxdale Garage.

The H. D. Brown Auto Co., Fulton, Mo., has moved its salesrooms from Market Street to the Tucker Building on the north side of Court House Square.

The Amesbilt Motor Co., Clinton, Mo., has been changed to the Palen Motor Products Co.

The Brown Auto Company, Dallas, is in its new home, 2021 Commerce Street. The company recently took over Nash cars and trucks.

J. A. Bergfeld Motor Company, Dallas, has taken over the state for the distribution of the Napoleon cars.

The W. F. Brittson Motor Car Company, Dallas, has taken over the distribution of the Hackett cars, made by the Hackett Motor Company, Jackson and Grand Rapids, Mich.

The Overland Automobile Company, Dallas, has moved into its new building, Ervay and Cadiz Streets.

Tenison, Blair & Frey, Dallas, distributors of the Lexington and Briscoe cars, occupy their new home at Commerce and Preston Streets.

The Owen Littlefield Automobile Company, Dallas, has leased the building at 2025 Commerce Street and will soon move into it.

The Lee Auto Company, Dallas, will soon occupy its new home on East Main Street.

The C. H. Gray Rubber Company has moved into its new home at Main and Pearl Streets, Dallas. It now has the largest service station in the Southwest.

A. H. Sawyer, for several years salesman for the Wales Adding Machine Co., has been made truck salesmanager for the Packard-Missouri Motor Co., St. Louis.

George L. East, who has been associated with the Oldsmobile interests for 11 years, has resigned his connection as assistant sales manager to join the Gulf Oldsmobile Co., at New Orleans, distributor of Oldsmobile cars for Louisiana.

E. J. Wright, formerly with the Allen Motor Car Co., Flint, Mich., has been appointed assistant to the salesmanager of the Dort Motor Car Co.

L. B. Tebbets & Co. has opened a salesroom and service station at 2125 Locust Street, St. Louis.

The Moberly Overland Co. has moved into new quarters on West Reed Street, Moberly, Mo. The old quarters were destroyed by fire last winter.

The Gee Garage Co., Moberly, Mo., has changed its name to Gee Welding Co. and has added equipment.

J. H. Nebergall & Son have opened a Gates Half Sole Shop at 511 Reed Street, Moberly, Mo.

The General Auto Service Co. has been succeeded by the Moberly Livery Auto Co., Moberly, Mo.

#### New Garages

Coldwater Vulc. Co. (Welch & Graham), Coldwater, Kan.  
 Pumpelly & Wilkinson.....Cedar Vale, Kan.  
 C. L. Durham.....Salina, Kan.  
 H. M. Madison.....Parsons, Kan.  
 Square Deal Auto Co.....Caney, Kan.  
 C. O. Varner.....Augusta, Kan.  
 S. F. James & Son.....Eureka, Kan.  
 O. H. Yong.....Hartville, Mo.  
 Edwin Tiede.....Billings, Mo.  
 Dave Lewis.....Mehan, Okla.  
 Melton & Conger.....Duncan, Okla.  
 L. G. Barker.....Arnett, Okla.  
 J. N. Kirkpatrick.....Burneyville, Okla.  
 Frank Powell.....Don Juan, Tex.

#### New Trucks

Spring Street Motor Co., Quincy, Ill., has taken the agency for the Bethlehem trucks.

#### EAST

The J. S. Hurley Motor Co., Broad and Race Streets, Philadelphia, has opened a new service station at Twenty-third and Chestnut Streets, 100 x 150. The company distributes Reo motor cars.

Constable Brothers, contractors, will start work on the largest garage in western Pennsylvania at French and Fifth Streets, Erie, Pa. It will be known as the Erie Fireproof Garage. It will cost \$35,000.

John Y. Myers, Lowell, Mass., has opened an accessory store at Worcester, and he intends to add another at Boston, making four in all.

Farley & MacNeill, Boston, Mass., have been given the exclusive agency for the Monkey Grip Patch for New England.

The Selden Philadelphia Sales Agency of which George B. Hood is proprietor, has just purchased the large garage and sales office at 3427-3429 North Broad Street, Philadelphia, and has been appointed agent in this territory for the Selden motor truck.

The Maxwell-Chalmers Sales Corp., capitalized at \$250,000, has been formed in Philadelphia and has taken over the distribution of Maxwell and Chalmers cars. The company is a merger of the Penn Well Motor Car Co. and the Maxwell Sales Co. D. J. Finkelstein is president of the new company.

The Wallace Motor Car Co., Newark, N. J., Liberty dealer, has removed its salesrooms at Avon and Somerset Streets to its new downtown quarters at 894-896 Broad Street.

The L. S. Bowers Co., Philadelphia, Liberty dealer, has returned to its permanent salesrooms at 245 North Broad Street, which were temporarily vacated on account of damages sustained in a recent fire.

#### New Truck Dealer

The Lowell Bulck Co., Lowell, Mass., has become agent for G M C truck.

#### New Garages

James F. Creevy (\$1000, 17 x 50), Philadelphia  
 Michael Rock, Jr. (\$10,000).....Philadelphia  
 Overbrook Steam Heating Co....Philadelphia

#### NORTHWEST

C. E. Summy, Primghar, Iowa, has purchased the interest of W. L. Mills in the Primghar Auto Co.

Paul S. Wells, Des Moines, one of the owners of the Motor Sales Co., Chevrolet dealers, has enlisted in the artillery.

J. N. Worrall, Springville, Iowa, has sold his interest in the Ford agency to R. F. Wiley.

Walter Myers, Marengo, Iowa, has bought the Wyant Garage.

Ray Fuller, Garnaville, Iowa, has closed his garage and gone into the army.

Collins Oil Co., Shenandoah, Iowa, will open a new service station.

The Strandberg Auto Co., Dayton, Iowa, has bought the Hendricks & Starks Garage and taken over the Ford agency.

E. Campbell, Sewell, Neb., has bought a half interest in the Burns Tire Shop.

#### New Garages

Carroll County Auto Salvage Co., Carroll, Iowa  
 Hans Nelson.....Kimballton, Iowa  
 O. S. Earlander.....Cedar Rapids, Iowa  
 A. E. Beason (addition).....Audubon, Iowa  
 Hall and Steard.....Nevada, Iowa

#### MIDDLE WEST

The Ideal Service Garage, Hartford, Wis., has doubled the size of its repairshop and installed numerous new machines and tools.

The Diener-Nelson Co., Milwaukee, distributor of the Haynes and Grant Six, has moved into a new fireproof garage and service building at 626-628 Wells Street, adjacent to its former quarters in the Mulkern Garage.

Tri-State Motors Co., successor to the Elton Oldsmobile Co., Youngstown, Ohio, is completing its removal from its former quarters at 101 South Phelps into its new location, 217 Wick Street.

August Schanz, Quincy, Ill., has opened a repair station at State and Sixth. The Overland Automobile Co. is now located in its new home, at 609 and 611 Vermont. D. R. Yantis is manager of the Quincy agency.

The Stroet Co., Quincy, Ill., has taken the agency for the Perfection tires.

John H. Hild and C. G. Alberts, Ashland, Ohio, who have been doing business in the Flinn Block, on East Second Street, under the firm name of the Lincoln Tire & Tube Repair Shop, have dissolved partnership. Mr. Hild has purchased the interest of Mr. Alberts and will henceforth operate the business under the name of the Hild Tire & Tube Repair Shop, and will continue to be located on East Second Street.

#### New Garage

Chestnut Garage.....Cleveland, Ohio

#### New Truck Dealers

Modern Truck Sales Co., 39 Charlotte Street, Detroit, will distribute Acason Motor Trucks in Michigan.

Lucas & Christenson, 1730 Euclid Avenue, Cleveland, have been appointed agents for the state of Ohio for the Stegeman truck.

The Hinkel Motor Truck Corp., Cleveland, has been organized by Matt J. Hinkel, who is president. Kelly-Springfield trucks will be handled at 6519-21-23 Carnegie Avenue, where a new building, added to the present structure, will mean approximately 30,000 sq. ft. of space. Clarence M. Hinkel, son of the president, will be general manager of the corporation.

The Milwaukee Bethlehem Agency, 322-324 East North Avenue, Milwaukee, has been organized by Charles E. Imbusch to deal in the Bethlehem truck in Milwaukee and immediate vicinity.

#### New Tractor Dealers

The John Lauson Mfg. Co., New Holstein, Wis., manufacturer of the Lauson kerosene tractor, has appointed the Packard-Cleveland Motor Co., Cleveland, Ohio, as distributor in a large territory in Ohio. The remaining sections of the state will be represented by the Abele-Nauts Sales Co., Columbus, Ohio, and the H. H. Almroth Co., Toledo, Ohio.

The following new Koehler truck agencies have recently been placed by the Koehler Motors Corporation:

John E. Watson, Woodstown, N. J.  
 Sauner Hardware Co., Shamokin, Pa.  
 J. Calvin Boyer & Sons, Mt. Pleasant Mills, Pa.  
 High & Trout, Pottstown, Pa.

#### Gardner Sells St. Louis Chevrolet

ST. LOUIS, Aug. 9—A display advertisement printed in local newspapers announces that Russell E. Gardner has sold his entire stock holdings in the Chevrolet Motor Co. of St. Louis. He says the reason for disposing of these holdings are that Russell E. Gardner, Jr., salesmanager for the St. Louis plant, and Frederick W. Gardner, production manager, are in the naval service. It had previously been announced that the General Motors Co. had taken an option on the Gardner stock for \$1,000,000. The Gardners became interested in the Chevrolet Co. when their former buggy factory was made a body production and an assembly plant for the Chevrolet cars. At the time the option was taken on this stock, it was announced that the General Motors Co. had bought a 105-acre tract here as the site of a larger plant in this city. The deeds for this property were signed last week.

#### Halladay Gets Cameron Plant

LEXINGTON, OHIO, Aug. 9—The Halladay Motor Car Co. has purchased the factory buildings of the Cameron Car Co., Atica, Ohio, and will occupy them Oct. 1.

#### Milwaukee Home for Lavine

MILWAUKEE, Aug. 5—The Lavine Gear Co., Racine, which is erecting a complete new manufacturing group in Milwaukee, is completing arrangements for the transfer of its entire business from Racine to Milwaukee. The capital stock is being increased from \$100,000 to \$1,000,000 to provide for the general expansion of production.

#### Chas. W. Nash Is Dined

KENOSHA, WIS., Aug. 8—Department heads and foremen of the Nash Motors Co., Kenosha, Wis., tendered a banquet in honor of Charles W. Nash, president and general manager of the company, who left July 31 for Washington to assume his duties as assistant to John D. Ryan, director of aircraft production, in charge of engineering and production. While in the Government service, Mr. Nash has relinquished active connection with his company.

#### Macon Dealers Keep Open Four Hours Sunday

MACON, MO., Aug. 10—All garages, repairshops and accessory stores, as well as gasoline stations in this city and county, are now closing on week days at 9 each evening, on Saturdays at 11, and are open on Sundays and holidays from 7 to 9 mornings and from 7 to 8 evenings.



# Automotive Equipment

## RITEMIX GASOLINE ECONOMIZER FOR FORDS

A gasoline economizer for Fords which consists of an air heater and needle-valve regulator. The air valve is fitted in the opening of a specially designed pipe which replaces the regular Ford hot-air pipe. This pipe has a large flange which fits over the top of the exhaust manifold and heats an increased amount of air. The regulator valve moves with each suction of the engine and automatically regulates the mixture. Can be installed in a few minutes without machine work or fitting and when once adjusted needs no further manipulation. Price \$3.50.—Perfection Auto Parts Co., 2130 Superior Avenue N. E., Cleveland.

## VELOX HIGH-SPEED VISE

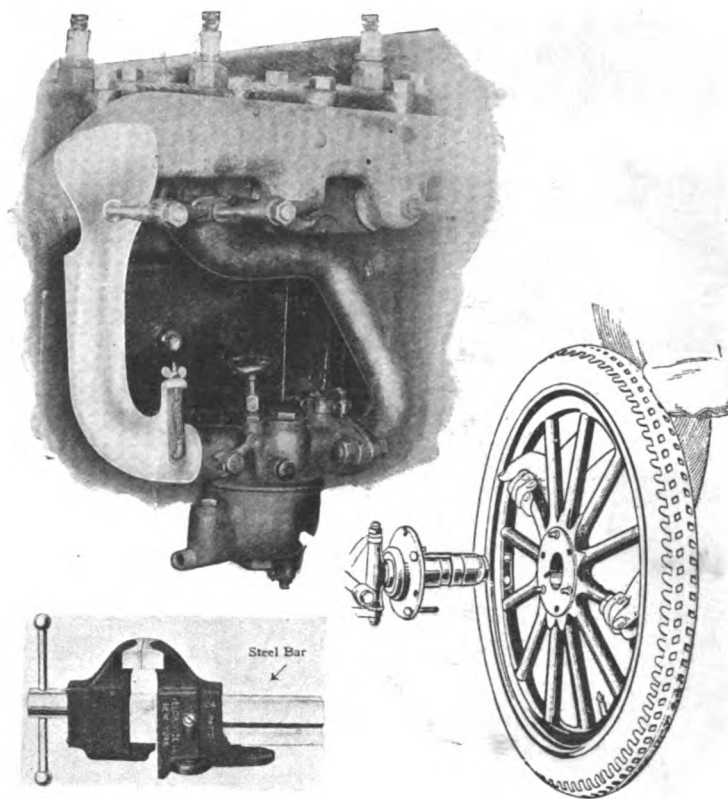
A high-speed vise which is operated by lifting the screw-head slightly and sliding the jaw in or out, then dropping it and tightening the screw. The screw is only used for the tightening and only a partial turn is required to tighten or loosen the jaw. The bar is of narrow steel. Made in sizes of jaw from 2 to 6 in., at prices from \$4.75 to \$25.—Velox Vise Co., Lowville, N. Y.

## FERROSTAT VACUUM BOTTLE

An all-metal vacuum bottle consisting of two chambers made from high-grade steel with a specially insulated vacuum space separating the other shell from the inner container. The two are connected by welding and sanitation is insured by enameling the inner container and by eliminating any opening into which liquids might leak. The parts are non-breakable and no glass is used in the construction. Claimed to keep boiling liquids hot for 20 hrs. and ice cold liquids cold for 40 hrs. Made in 1- and 2-qt. sizes.—Stanley Insulating Co., Great Barrington, Mass.

## IMPERIAL GAS-TANK SEAL

A seal for the vent of the gasoline-tank filler cap containing a valve which admits air to the place of the gasoline which is drawn out, but which does



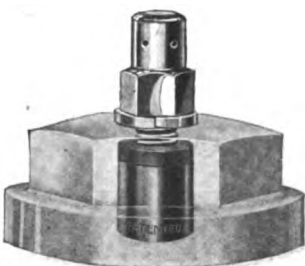
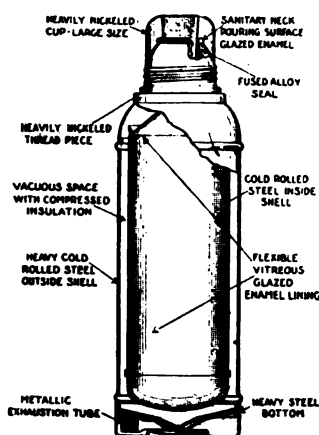
not allow vapor to escape from the hole. To install, a  $\frac{3}{8}$ -in. hole is bored through the cap and the two parts of the seal are screwed together through the hole. Price \$3.—Imperial Brass Mfg. Co., 1200 West Harrison Street, Chicago.

## E-Z-WAY DEMOUNTABLE WHEELS

A set of demountable wheels for Fords includes four complete wheel changes with inside flanges, extra Ford wheel, spare wheel carrier and socket wrench. The original Ford wheels are used and new flanges and collar-stud bolts put on. The wheels are demounted by slackening the nuts from these, when the wheel will come off. No machine work is necessary. Price \$12.50 for passenger cars, \$10 for truck Fords.—J. P. Gorman Co., Inc., 380-384 Canal Street, New York City.

## UNIVERSAL SCREW CABINET

A cabinet with drawers suitable for holding screws, brads, nails, nuts, bolts and other small articles. It is substantially constructed of oak and steel, the back panel being sheet steel to make the cabinet proof against vermin and dust. The sides and bottom of each drawer are made of one piece of steel, the back and front being of wood. The finish is light golden oak, polished brass drawer pulls and card holders. Drawers are 8 x 3 x 2½ in., inside measurements. Made in two sizes; 50 drawers, \$19.85; 100 drawers, \$34.60.—Hobart Bros. Co., Troy, Ohio.

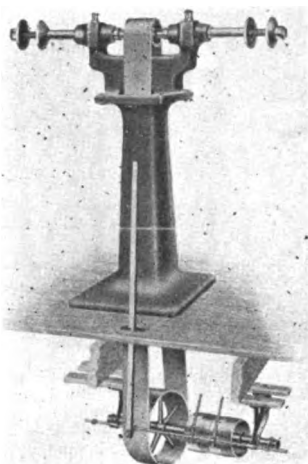


## LITTLE GIANT SILENCER AND BRACE

A silencer and brace for steering rods, made of spring steel and so constructed that the spring action keeps the steering-arm bushings tight against the bolts to prevent rattle and at the same time the spring action tends to keep the wheels pointed straight ahead. Device is kept in position by the spring of the steel which keeps the hooks over the steering rod. Price 75 cents per pair.—American Auto Products Co., 240 South Broadway, Denver.

### ST. LOUIS POLISHING MACHINES

These garage polishing machines have babbit bearings and either felt oiling devices or chain oilers. The arbors are 40 point carbon steel and the babbit is selected as the most suitable for the speed at which they are to run. All machines are arranged to run from below the floor with a countershaft. When furnished with tight and loose pulleys, a mechanical belt shifter of approved design is included. The machines are filled, rubbed down to a flat surface and painted with oil-proof paint. Prices range from \$33 to \$166.70.—St. Louis Machine Tool Co., 932 Loughborough Avenue, St. Louis.



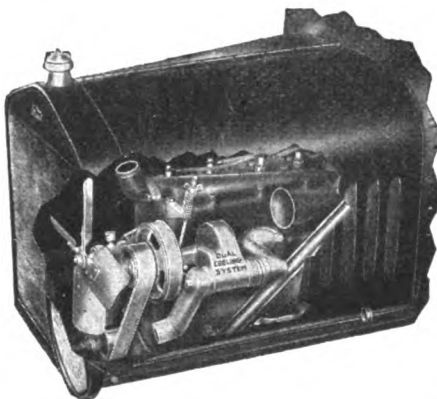
### SUN-RAY LENS DISPLAY CARD

This display card for Sun-Ray Lenses is lithographed in three colors and is 11½ x 27 in. The card is made to hold a pair of lenses in such a way that a light can be placed behind them if desired. One card is packed with every 10 pair of lenses and one will be sent to any dealer free.—Prismolite Co., Columbus, Ohio.



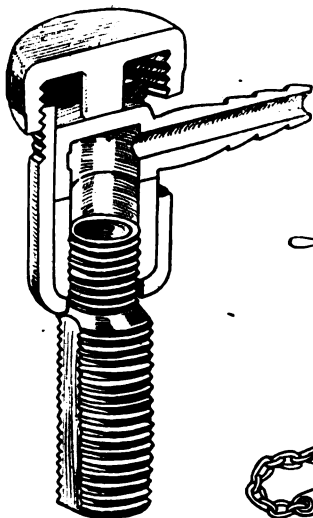
### DUAL COOLING SYSTEM FOR FORDS

An auxiliary cooling system for Fords, comprising a centrifugal force pump, 14-in. high speed, ball-bearing fan and the necessary parts to install these members. The circulating pump is installed between the side inlet to the cylinder block and the bottom outlet of the radiator. The pump shaft has a double pulley, one of the faces being smaller than the other. The small-faced pulley is belted to the pulley on the crankshaft and is equal in size to it. The larger pulley drives a small pulley on the fan, thus giving it a higher speed. The device can be attached in less than an hour without machine work, drilling or tapping holes. Price \$25.—Dual Mfg. Co., 1201 Hennepin Avenue, Minneapolis.



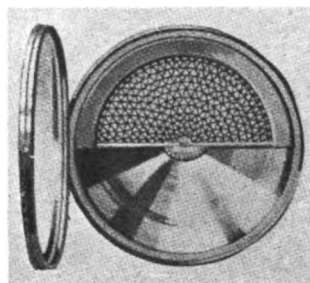
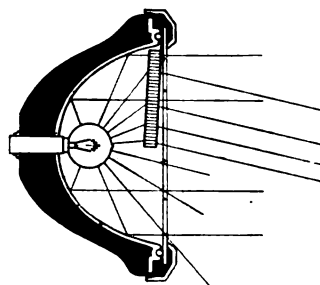
### ANTHONY PUMP CONNECTION

A pump connection that is put on and taken off the valve stem by sliding instead of screwing. The rubber packing is compressed around the threads when the threaded cap on the top is screwed down. Price 35 cents.—J. P. Gorman Co., Inc., 380-384 Canal Street, New York City.



### FLOAT-A-FORD SHOCK ABSORBERS

A multiple-spring shock absorber for Fords combining both shock absorbing and rebound features. The separate sets of springs provide for the different periods of vibration to carry the load and check the rebound. The absorbers are inserted in place of the regular spring shackles



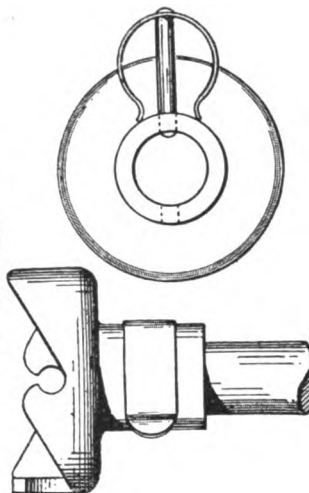
and one set of springs operates on each side of the lever. Can be fitted without machine work.—Burpee-Johnson Co., Indianapolis.

### RAYDEX GLARE ELIMINATOR

A metallic honeycomb shield which is fitted into the upper half of the headlamp just in back of the glass to reflect downward all the rays of light that would ordinarily go above the legal limit. The inside surfaces of the honeycomb have highly polished reflecting surfaces so that no light is lost, but is reflected to where it should go. Made entirely of metal, heavily nickel plated and welded into one piece. Claimed to be practically unbreakable, and not to rust or tarnish. Made in sizes to fit all lamps. Price \$6 per pair. Special Ford size, \$5.50 per pair.—Raydex, Inc., Jamestown, N. Y.

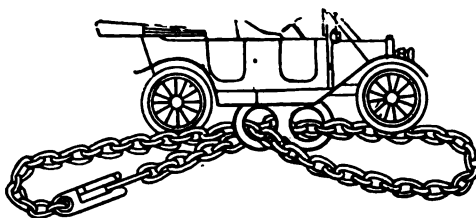
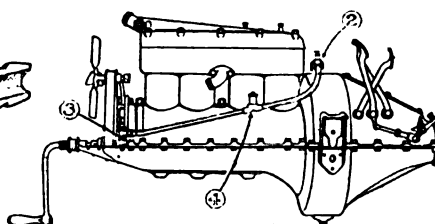
### RATCHET CRANK PIN FOR FORDS

A device for securing the crank ratchet pin on a Ford against displacement and falling out, and also a means for replacing a lost or worn pin without the necessity of taking the car to a garage. One end of the pin is riveted into a hole in the center of a spring which clasps around the crank ratchet, holding the pin in place. The pin requires no riveting.—American Auto Products Co., 1319 L Street, Northwest, Washington, D. C.



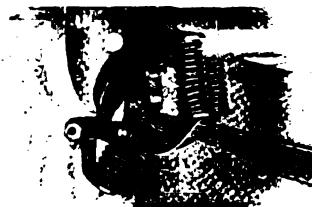
### SAFEBAY FORCE-FEED OILER FOR FORDS

An oiling system for Fords comprising an oil tube that collects oil thrown from the magneto magnets and carries it outside of the engine to the timing gears at the forward end of the engine. There is a small scoop extending directly over the fly-wheel magnets which catches the oil as it is thrown around. Being on the outside of the engine, the oil is cooled and the tube can be cleaned if it becomes stopped up. The incline of the tube is greater than that of the regular Ford oil tube so that lubrication is assured when driving up the steepest hills. Can be installed in less than half an hour and requires no machine work. Price \$8.50.—Consolidated Mfg. Co., 512 Syndicate Bldg., Oakland, Cal.



### NOVELTY KEY RINGS

Key rings consisting of snap chains and small metal tags in the form of miniature automobiles, the back of the tag being stamped with the dealer's name and address. Intended to be distributed to customers. Vaughan Novelty Co., 711 Polk Street, Chicago.



# 600 Members Last Week

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## *Campaign of National Automobile Dealers' Association Indicates Goal of 5000 Will Be Passed*

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### 600 Members Last Week

ST. LOUIS, Aug. 12—Last week was the banner period for memberships at the N. A. D. A. headquarters here, the number going well over 600 for the six days. The biggest boost of the week was the Boston list, which came in two packages, one of 330 and another of 32, making 362 memberships received in one day, the largest contribution of any one headquarters. Buffalo sent 60 memberships during the week and McAlester, Okla., and Lincoln, Neb., joined with full local memberships and some to spare.

*President Vesper will spend next week in Washington, where he will be in consultation with the Conservation Division of the War Industries Board. He also will interest himself in the war tax legislation.*

The Boston memberships came by express and were insured for \$5,000, and there was considerable speculation with President Vesper and his staff while the package was being opened as to what could be coming of so much value. The contents were the 332 membership applications and the checks from the applicants.

A campaign on the Pacific Coast probably will be the next big drive for memberships. Executive Secretary Peake and some Western enthusiasts probably will make this trip.

A special drive for the last week of August is being planned. This will be put up to the large number of workers who have handled the membership campaigns in the various localities.

Recently there has been a consistent demand from garagemen that they be allowed to share in the work of the N. A. D. A. Many have sent their checks to President Vesper's office, asking that they be enrolled as members, but, under the by-laws, the checks had to be returned and the garagemen were thanked for their trade loyalty.

### Vesper Talks of Tax

ST. LOUIS, Aug. 12—"An analysis of the tentative schedule of revenue taxation as applied to the automobile industry recently made by the Ways and Means Committee of the House develops some peculiar inconsistencies which will meet with vigorous protest on the part of the automobile dealer of the United States," said F. W. A. Vesper, president of the National Automobile Dealers' Association, after receiving the full text of the proposed schedule.

"The increase of over 300 per cent (from 3 to 10 per cent) on the manufacturers' tax is excessive. A slight reasonable increase was expected, and even if the tax had been doubled it would probably not have met with very serious opposition on the part of either the manufacturer or the dealer, but a very vigorous protest against an increase to 10 per cent will undoubtedly be made.

"The Federal license, as advocated at the hearing before the Ways and Means Committee, was adopted, although the schedule, as stated, has been practically doubled.

"The automobile dealers proposed the use of horsepower basis as now utilized by state license departments, and the horsepower basis is the one finally adopted.

"The tax of 2 cents per gallon on gasoline will meet with no opposition on the part of automobile dealers or owners so long as the tax is made to apply to all gasoline, but if it is intended as a tax against automobile usage only a very determined fight will be made against it.

"The feature that comes in for the most criticism in the bill is the proposed tax of 5 per cent on trucks and commercial cars. In view of the circumstances this is held to be decidedly wrong, inasmuch as the commercial car should at this time receive every encouragement

rather than otherwise, and it is felt that this tax should be eliminated altogether; if not, at least no increase over the old tax of 3 per cent should be made. Every possible encouragement should be given the commercial cars," continued Vesper, "and any tax that would tend to in any way interfere with the production or sale of commercial trucks should meet with determined opposition on the part of every business concern.

"The National Automobile Dealers' Association has taken the position that it is perfectly willing to be taxed so long as it is equitable and consistent with other lines of trade, but does not feel that any tax that will arbitrarily curtail the production and sale of cars beyond what it will normally be on account of the material situation should at this time be considered by Congress.

"A legislative committee of the national association has the matter in charge, and the Washington office will keep the membership continually advised concerning the progress of the bill."

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### Found Public "Conserved"

KANSAS CITY, Aug. 10—A dispatch from Washington announcing that the Government had issued no formal orders requiring garages to close nights, Sundays and holidays caused temporary interference with the conservation program here.

Most of the garages, as well as repair and service stations, tire shops and filling stations, had been closed for nearly a month nights and Sundays; when this dispatch came many garages announced to their trade that they would reopen. Some of the garagemen that resumed night and Sunday service on passenger cars found that the public had fallen into the conservation program—and there was not enough business to justify the extra hours.

It is expected that eventually most of the garages will again get on the conservation basis. Some of the larger garages have not resumed night and Sunday service; one, which was a tow-in station, has relinquished that privilege because of complaints of other garagemen that the program gave it an advantage.

Oil stations are keeping open until 9 o'clock, closing on Sundays and holidays. Some oil stations are closing at 6 o'clock—the public having already got into the habit of stocking up on oil in legitimate business hours.

The dispatch mentioned was republished from the Kansas City paper in which it first appeared by a Topeka paper, with the result that some Kansas garagemen also abandoned their conservation program.

### Sunday Closing Takes Well

ST. LOUIS, Aug. 12—The war service program appears to finally have gotten a satisfactory hold on the trade. The last week has brought fewer complaints to the N. A. D. A. president's office than any previous week since the program was proposed.

The recent appeals have been in the nature of appeals for help. One county will close and the neighbor county has not yet got to it. The closed county asks that something be done to hurry up its neighbor. The old state line question also comes up repeatedly. A city will be closed while a town across the state line will not. But these problems are being ironed out. One of the most prolific causes of complaint was removed when F. M. Hoblitt, president of the Quick Tire Service Co., Inc., of New York, ordered all stores connected with that service to close.

The gasoline situation is still troublesome in certain sections, but in many cases stations are being brought to time by motor car owners declining to patronize stations which remain open when they understand the situation. A number of communities have reported such developments.

At Louisville, Ky., the tire service stations decided to close regardless of the oil stations. The situation there had been at a deadlock.

Reports of 100 per cent war service program came from Charlotte, N. C.; Council Bluffs, Iowa; Hannibal, Mo.; Muncie, Ind.; Superior, Wis.; Jonesboro, Pine Bluff, Fort Smith and Texarkana, Ark. The four Arkansas cities formed local associations to carry on this work, according to A. W. Parke, secretary of the Little Rock association. Parke advised that Arkansas would be closed throughout within a week. Correspondence from Iowa and Minnesota predicted statewide closing within two weeks.

### Reeke on N. A. D. A. Work

MILWAUKEE, Aug. 12—Alfred Reeke, head of the Alfred Reeke Co., Milwaukee, distributor of the Nash, is making a tour of investigation as state

director of war conservation of the National Automobile Dealers' Association, to determine if Wisconsin dealers and garagemen are complying with the regulations and rules relative to the business. Violations reported so far have been few and far between, and Reeke believes he will be able to return with a 100 per cent report. Garagemen in all of the smaller communities have adopted the rules and arranged for an emergency service station for Sunday, holiday and night work under the usual restrictions.

### Elizabeth Organizes

NEWARK, N. J., Aug. 10—The Elizabeth Automobile Trade Association has been organized and will meet again this week. Permanent officers have not been elected yet. Perth Amboy also has formed an association. Assistance was rendered in this work by Claude Holgate, secretary of the New Jersey Automobile Trade Association.

The New Jersey association has made an arrangement for the financing of all its dealer members in the National Automobile Dealers' Association, and plans to take an active part in the work.

### 100 Per Cent for La Crosse

Editor Motor World: The La Crosse Automobile Dealers' Association to-day sent ten more memberships to the National Automobile Dealers' Association, which makes 100 per cent membership for La Crosse.—La Crosse Automobile Dealers' Association, Harry Dahl, Secretary.

### Canton Garagemen Agree on Closing Time

CANTON, ILL., Aug. 10—The garages, accessory stores and filling stations have agreed to close here at 6 each weekday, except Saturday night, all day Sunday and holidays, and to eliminate all unnecessary and free service inspections and minor adjustments. All charge accounts will be withdrawn and all supplies, parts and repairs will be strictly cash. The following firms have subscribed to the agreement: J. T. Jelly, Mackemer Motor Co., F. A. Dunniway, C. E. Mills, Ed Joiner & Son, R. E. Richardson, Willard Service Station, Ross A. Snider, M. McClatchey, Guy Coleman, Fred E. Ellis, D. A. Held and Ace Connors.

## Philadelphia Pushes Closing

PHILADELPHIA, Aug. 9—The intention of the Philadelphia Automobile Association to advance the War Economy Board's plan of closing service stations, repairshops, and stock and salesrooms by 6 p.m. weekdays, and all day Sundays and holidays, beyond its own membership, is seen in the issuance this week of 1000 circulars announcing the plan to dealers and other members for distribution among their clientele.

The circular says: "At the request of the War Economy Board and effective July 10, 1918, the repairshops, stockrooms, service stations and salesrooms of the undersigned automobile dealers will be closed by 6 p.m. weekdays, and all day Sundays and holidays. The number of men engaged in night, Sunday and holiday service has been large in the aggregate, and as this service has been used by only a small proportion of motorists, its continuance during these times of acute labor shortage is inadvisable.

"Therefore, acting on the recommendation of the War Industries Board at Washington, it will be discontinued after July 10, 1918. For those of you who, through accident, etc., may need emergency service during the periods in which we are closed, certain service stations located in different sections of the city will be open for emergency work. A card will be sent you giving names and locations of stations and a schedule of rates which will prevail for such work. We sincerely trust you will appreciate the necessity of this step. It is our earnest desire to continue giving the same standard of service that we were able to

offer before the war and we believe that with your assistance in eliminating unnecessary service, such as we have mentioned above, it will be possible for us to do so." The circular goes to the following:

A. E. Maltby, manager, Winton Co.; A. W. LaRoche, LaRoche Bros., Inc.; W. H. Metcalf, Wire Wheel Corp. of America; J. Harry Schumacker; Louis C. Block, manager, Ford Motor Co.; W. R. Walton, manager, Firestone Tire & Rubber Co.; Charles S. Bowers, L. S. Bowers Co.; Henry A. Rowan, Jr., Co., Haynes Automobile Co.; Aldine Garage; R. J. Skilton, Larson Oldsmobile Co.; G. R. Wright, manager, Chevrolet Motor Co. of Pennsylvania; Herbert Bros.; S. R. Blockson, S. R. Blockson Motor Co.; Samuel Earley, Samuel Earley Motor Co.; Edward W. McCurdy, McCurdy-Brainard Co.

G. List, manager, United States Tire Co.; J. R. Pierpoint, B. L. P. Motor Co.; John H. Fassitt, treasurer, Foss-Hughes Co.; W. A. Lockwood, manager, Studebaker Corporation; J. H. McCullough & Son; J. E. Gomery, treasurer, Gomery-Schwartz Motor Car Co.; F. P. Gaul, treasurer, Gaul, Derr & Shearer; A. P. Hawes, manager, Locomobile Co. of America; John Bayne, Chalmers Motor Co. of Philadelphia; A. C. Maucher, Eastern Motors Corp.

T. S. Johnston, Scripps-Booth Corp.; E. R. Fearnside, Murray Motor Sales Co.; Leland S. Hannold, Stoeve-Hannold Motor Co.; C. E. Wells, manager, Oakland Motor Car Co.; W. S. Kip, manager, Buick Motor Co., Philadelphia branch; James Sweeten, Jr., Hupmobile Sales Corp. and Sweeten Auto Co.; W. L. Hawkins, manager, Mitchell Motor Car Co. of New York; J. S. Hurley, president, Hurley Motor Co.; F. A. Kissell, manager, Kelly-Springfield Tire Co.

E. H. Fitch, manager, B. F. Goodrich Co. and Diamond Rubber Co.; Harry E. Walls,



W. Clarke Grieb; R. V. Beals, assistant treasurer, Bigelow-Wiley Motor Co.; John D. Howley, manager, White Co.; H. A. Neill, General Motors Truck Co.; S. Stankowich, Jr., Thornton-Fuller Auto Co.; Lee J. Eastman, president, Packard Motor Car Co. of Philadelphia; A. J. Diesinger, manager, Flat Motor Co. of Philadelphia.

J. D. Turner, manager, Penn-Well Motor Corp.; C. R. Cunliffe, Automobile Sales Corp.; Norman G. Wilson, Stanley Motor Carriage Co.; J. C. Bartlett, president, Bartlett Garages, Inc.; W. A. Kuser, manager, Lexington Agency; O. E. Bell, manager, Bell Motor Co.; Edward W. Burnshaw, Jr., Girard Auto Co.; Frank J. Fanning, president, Fanning-Mathis Co.

Charles T. Parker, president, Parker Motor Sales Co.; H. I. McConnell, H. C. Roberts Electric Supply Co.; Harry B. Paton, J. G. Duncan, Jr., Co.; G. S. Lane, manager, Westinghouse Air Spring Co.; F. X. Berrodin, treasurer, Berrodin Rubber Co.; C. E. Cahall, president, Cahall Motor Supply Co.; H. D. Worthington, Republic Rubber Co.; H. B. Cunningham, secretary, Automotive Co. of Philadelphia; William L. Bonner, store manager, Fisk Rubber Co.; Carroll A. Haines, treasurer, Magnetic Auto Co.; H. B. Harper, president, Overland-Harper Co.; J. William Nock, George W. Nock Co.; C. A. Wigmore, treasurer, Manufacturers' Supplies Co.

#### Washington, Pa., Organizes

WASHINGTON, PA., Aug. 8—A representative meeting of automobile and automobile accessory dealers was held in the Community Building last night for the purpose of forming a county organization and devise ways and means of putting in force the new regulations of the war economies board.

T. C. O'Rorke, of Washington, who has been an active worker in the interests of the new regulations, was elected president; A. D. Spencer, of Charleroi, vice-president; C. B. McAllister, of Washington, secretary, and E. C. Campbell, of Donora, treasurer.

Directors for the organization were elected as follows: Harry Sprowls, Claysville; Harry Landefeld, Monongahela; C. B. Berkhalter, Bentleyville; Walter Fulton, Burgettstown; James Heberon, West Brownsville; B. Frank Emery, Millsboro; B. F. McCartney, McDonald; George Holke, Canonsburg; W. C. Duff, California; C. Garfield Gregg, Marianna; Henry Vogel, Hickory; J. H. Coombs, Venetia.

#### Small Snag in Bloomington

BLOOMINGTON, ILL., Aug. 9—The Bloomington Automobile Trade Association has been able to swing all but two firms into line on the suspension of garages nights and Sundays. Despite all appeals, their places of business are kept open after 6 p. m. and all day Sunday.

The local association, as a last resort, published in the newspapers the program of conservation as outlined by Chairman F. W. Vesper, of the War Service Committee, and concluded with this statement: "That the prompt and full compliance with the conservation program is the patriotic duty of every American citizen should need no argu-

ment, nor will it to those who put service to their country and a willingness to do their part toward winning the war ahead of personal profit.

"In this manner, as in all others having any bearing on the war, there can be only one of two courses for every man to take; either he complies with the Government request and uses his full influence to have others do likewise and thus proves himself a loyal American, or, by failing to do so, he allies himself with the enemies of our Government."

#### Moberly on War-Saving Basis

MOBERLY, MO., Aug. 10—War time economies are in full force here. The automobile dealers, garages and service stations have agreed to close at 7 each evening and all day Sundays and holidays. The only exceptions to the closing program is on Saturday nights and railroad pay-day nights, when the garages are kept open until midnight. Garages that keep storage cars are allowed to have a man on duty until midnight to receive cars from their customers. All dealers have signed the agreements and everything has been placed on a cash basis, supplies, gasoline, oils and repairs.

Among the signers of the agreement are the following: Reichel Motor Co., Ogden Motor Co., Polson & Steadman, Goddard & White, Motor Inn, Overland Moberly Co., Gee Welding Co., Fenell Carriage and Motor Works, Moberly Tire & Vulcanizing, Figgin & Shumate and Moberly Truck & Tractor Co. Business has been above the average in this territory and the big problem is to get the cars, as one prominent dealer says there are more buyers than cars to be had. Used cars are also scarce, and when a dealer gets a used car on the floor buyers flock in for the bargain. The buyers are patriotic, too, for not a murmur is heard when the war tax is added to the sales price.

One of the factors in building up the automobile clientage in this territory is due to the fact that the leading merchants of the city contributed to a good roads fund, the purpose of which was to oil and put in good shape all roads within an 8-mile district of the city. H. Frank Holman was placed at the head of the 8-mile district, and it is mainly due to his initiative that the experiment has proved a success.

#### Brookfield Garagemen Close Sundays

BROOKFIELD, MO., Aug. 10—Dealers are getting together on closing hours and for the past four Sundays have closed their garages and repair shops all day Sunday, with the exception of being open to sell gasoline and oils from 9 to 10 in the morning and 7 to 8 in the evening. The garages are closing each evening at 9, and a determined effort is being made to close them earlier. E. K. Stoddard and William Roith have taken over the Buick service station and will operate day and night service for the tourists. Diemer Bros. have opened a tire and vul-

canizing station at 302 North Main Street, and the Pratt Motor Co. has taken the agency for the Briscoe for this territory.

The Dickinson Co., Ford agent, has moved into its new garage at the corner of Maine and Wood Streets. Dan Burkholder has taken an agency for the Indiana truck and will handle this truck line in addition to the Studebaker. Kent & Babb have succeeded the firm of Kent & Kester, as Mr. Kester has been called to the colors. Automobile sales are bigger than the demand and several of the dealers are extending their lines in order to get cars to sell.

#### Dealers Organize for War Service

CHILLICOTHE, MO., Aug. 11—Dealers here are trying to organize along war service lines, and a meeting has been called of all those interested. This city is on the main highway of most of the transcontinental routes and some plan will have to be worked out to take care of the tourists who pass through on their way to the West.

#### Texas Filling Stations on War Schedule

DALLAS, Aug. 10—Hereafter filling stations will be closed in practically every city in Texas on Sundays and at 8 o'clock in the evening. The stations were closed Sunday for the first time.

#### St. Louis Curtails Use of Cars

ST. LOUIS, Aug. 9—Following complaints that municipal motor cars are registering much unnecessary mileage, the city comptroller has ordered that after Aug. 10 all city-owned cars be placed in the municipal garage and ordered when needed and for a special service. A checking system similar to that used by taxicab garages will be installed. Only the Mayor will have a car at his disposal at all times.

#### Ayers Elected an Officer in D. A. D. A.

DETROIT, Aug. 10—J. C. Ayers, of the Towar-Ayres Co. and Denby Motor Truck Co., was elected vice-president of the Detroit Automobile Dealers' Association at a meeting of that organization last week. He succeeds George W. Franklin on the board, the latter having resigned on disposing of his automobile interests.

#### Short Measure Pumps in N. H.

CONCORD, N. H., Aug. 8—Harold A. Webster, Commissioner of Weights and Measures for New Hampshire, has started a crusade against short measure gasoline pumps. After receiving some complaints he had an investigation started and stated that he found, of those examined, about 80 per cent were giving short measure. Now he has put the entire force of his department to work to examine the 4000 pumps in the State.

## Gas Production Is Ahead of Last Year

**In May Ran 26 Million Over May of 1917—Stock on Hand Amounts to 460,000,000 Gallons**

Production		
	May, 1918	April, 1918
Crude oil (bbl.).....	28,510,698	26,201,554
Gasoline (gal.).....	319,391,202	293,396,160
Stocks on Hand		
	May 31, 1918	April 30, 1918
Crude oil (bbl.).....	11,824,633	12,600,062
Oil purchased to be re-run (bbl.).....	872,300	954,205
Gasoline (gal.).....	460,637,479	509,197,134
Kerosene (gal.).....	343,311,945	393,527,476
Gas and fuel (gal.).....	515,020,224	471,644,479
Lube (gal.).....	161,009,729	144,383,212
Wax (lb.).....	168,178,328	151,228,317
Coke (ton).....	15,583	13,109
Asphalt (ton).....	104,214	101,328
Miscellaneous (gal.).....	317,115,697	248,360,551

WASHINGTON, Aug. 9—During May, 1918, the average daily production of gasoline was 10,302,942 gal., which was an increase of 523,070 gal. per day over the production of April. The total production for the month of May was 319,391,202 gal.

The stock of gasoline on hand, according to figures just issued by the Bureau of Mines, was, on the last day of May, 1918, 460,637,479 gal., which is less than was on hand on April 30, the figures for the latter date being 509,197,134 gal.

The production of crude oil in May totalled 28,510,698 bbls. for the month, which gives a daily average of 919,700 bbls. The stock of crude on hand on May 31 was 11,824,633 bbls. as against 12,600,062 bbls. for April 30.

The accompanying tables show the production of crude oil and gasoline for May as compared with April, and the stocks on hand of crude oil and its derivatives as of the last day of each of these two months.

### Petroleum Specifications Standardized

WASHINGTON, Aug. 10—Specifications of petroleum and its products used by the different departments and bureaus of the Government will be standardized. The plan is to have standard grades of petroleum and its products for the purpose of avoiding duplication of effort and for economical reasons. Standardization will be accomplished by a Committee on Standardization of Petroleum Specifications, to be composed of a chairman appointed by the United States Fuel Administrator, a member appointed by the Secretary of War, a member to be appointed by the Secretary of the Navy, a member to be appointed by the chairman of the Shipping Board, a member to be appointed by the Railroad Administration, a member to be appointed by the Bureau of Mines and a member to be appointed by the Bureau of Standards. The specifications adopted will be binding upon and govern all departments, bureaus, agencies and offices of the Government. The United States Fuel Administrator, acting through the commit-

tee, will also effect a standardization of petroleum specifications for the purchases in the United States of the Allied governments. This scheme was announced in a proclamation by President Wilson. The order will remain in effect during the war and 6 months thereafter, or until amended, modified or rescinded.

### Use Women in "Laundry"

COLUMBUS, OHIO, Aug. 12—In order to assist in the conservation of manpower Glenn Frazell, proprietor of the Frazell Automobile Laundry, on North Fourth Street, has announced a policy of employing only women in his establishment, which washes and polishes automobiles. Miss Anna Foster entered the place some time ago and has made good as an inspector and finisher. Frazell declares that women are better fitted for the washing and polishing of automobiles than men.

### Chandler Profits to June 30 \$1,250,000

CLEVELAND, Aug. 9—After making a liberal provision for war taxes, the profits of the Chandler Motor Co. as of June 30, were somewhat in excess of \$1,250,000. When the books of the company were closed for the year 1917 the total was \$12,400,000. The production of passenger cars by the company has fallen off to about the same extent as other big companies.

### Reliance Truck Now Ready

APPLETON, WIS., Aug. 10—The Reliance Motor Truck Co., Appleton, Wis., now has its new plant in operation and by the middle of August will be turning out chassis in quantity. The entire equipment of the former works at Racine, Wis., has been transferred to the new shops.

### Ocean-to-Ocean Highway Association Not to Meet This Year

CHILLICOTHE, MO., Aug. 9—According to C. F. Adams, president of Pike's Peak Ocean-to-Ocean Highway Association, there will be no meeting of the members of the association this year. The various secretaries are preparing road data and reports. A. W. Henderson, of Colorado Springs, is preparing the road report from that city to Salt Lake, while H. A. Scheidker, of Hannibal, Mo., is at work on the Illinois and Missouri reports. Maps and other road information of use to tourists are being prepared and will be issued gratis to all who apply to the president's office.

### St. Louis Drive-aways Successful

ST. LOUIS, Aug. 11—The Ford dealers of the city have had their first drive-away from the Kansas City assembling plant since the St. Louis plant was closed and turned over to the Government for war work. An average of three cars were driven away by each dealer, and all report that the trip was made without any mishaps.

## Kansas Going Into Return Loads Work

**State Council of Defense Names a Committee to Propagate in Entire State**

TOPEKA, KAN., Aug. 9—Kansas is the first state officially to recognize the importance of the motor truck for transporting merchandise from one center to another and to make state-wide provision for the return truck load movement. A transport committee operating under the direction of the State Council of Defense has been organized, with W. C. Markham as chairman, who will be in active charge of the movement. The state has been divided into five districts, with a chairman for each district, as follows: First district is under H. S. Putney of Topeka; the second is under W. F. Allen, Chanute; the third is under John W. House, Wichita; the fourth is under Charles Lamer, Salina, and the fifth is under William Lutt, Concordia. Each district will also have an executive committee of five members to assist the district chairman to organize a working organization. The plan is to encourage the farmer to provide the return load for the trucks after they deliver the merchandise to the dealers. The movement has immense possibilities and the experiment will be watched with interest.

### Conaphores on Pierce-Arrows

NEW YORK, Aug. 2—The Edward A. Cassidy Co. announces that the Pierce-Arrow Motor Car Co., Buffalo, has adopted the Conaphore headlight lens, manufactured by the Corning Glass Works, Corning, N. Y., as standard equipment on its passenger cars.

### Ford Dallas Plant Closed

DALLAS, Aug. 10—Effective Aug. 20, the assembling plant of the Ford Motor Co. at Dallas will be closed. The plant here will be closed for an indefinite period.

### Texas State Fair Abandoned

DALLAS, Aug. 10—There will be no session of the Texas State Fair this year. Heretofore the Texas automobile show has been held in connection with the State Fair. Dallas dealers will meet probably next week to determine what steps will be taken toward holding a fall show.

### Automobile Makers Pay \$23,981,000 Revenue

WASHINGTON, Aug. 10—Automobile and motorcycle manufacturers and dealers paid into the Treasury Department \$23,981,000 under the war revenue bill for the year ended June 30, 1918, according to a statement issued by the Treasury Department.

## Fordson Price Is Up; Profitless Sale Ends

**Regular Prices Now to Be in Effect  
and Dealers and Distributors to  
Make Some Money**

SALINA, KAN., Aug. 5—The price on Fordson tractors has been advanced. The period of distribution "without profit" is at an end. Everybody now is making some money.

A meeting of state distributors of Fordson tractors was held a few days ago at the office of the Herring Motor Co., Des Moines, Iowa, and new wholesale and retail prices were made.

Probably the prices which prevail here may be taken as typical of what the Fordson prices will be everywhere, as in all probability a uniform price will prevail, freights being taken into consideration.

The Hudkins Tractor Co., distributor here for the Fordson in the 50 northern counties of Kansas, is making the following prices:

Retail price at Salina for the tractor .....\$920.00  
Retail price at Salina for the No. 7 Oliver plow..... 145.00  
Retail price at Salina for the Lean harrow, f.o.b. Mansfield.. 146.00  
Price of tractor to sub-dealer, f.o.b. Salina ..... 787.50  
To this price the dealer is permitted to add a profit of 12½ per cent.

As far as it is possible to ascertain here the price of the tractor to the distributor remains as it was, \$750, f.o.b. Dearborn, Mich.

Nor has any change been made in prices to distributors on the No. 7 Oliver plow nor the Lean harrow.

For the present the distributors and dealers selling the Fordson tractor will confine their equipment sales to the plow and the harrow, but will take on other lines as rapidly as they receive the approval of Henry Ford.

The Hudkins Tractor Co. sold 49 tractors on the no-profit plan. Of the 280 odd tractors shipped here for the demonstration, 141 were relayed to Wichita for the distributor who will handle the southern portion of that state, while the remainder either were distributed here locally or sent to sub-dealers in the Hudkins territory.

The Hudkins Tractor Co. claims to have sold 47 cars of tractors the week of the tractor demonstration.

### Will Inspect New Air Mail Planes

WASHINGTON, Aug. 8—Inspection of 6 new air mail planes built by the Standard Aero Corp. at Elizabeth, N. J., will be made this week by various officials of the Post Office Air Mail Service. The specifications for these planes call for a speed of 100 m.p.h., climbing capacity of 6000 ft. in 10 min., with a capacity of 300 lb. of mail. A staff of mechanics to maintain this equipment is now distributed throughout the factory of the

Wright-Martin Corp., New Brunswick, N. J., for the purpose of securing training. The Air Mail Service will be completely divorced from the War Department as soon as the new planes are delivered. Seven fliers, each with more than 1000 hours in the air to his credit, and who have been serving as flying instructors, have been selected for the mail service.

Plans are under way for considerable enlargement of the service, the feasibility of which has been shown by the record of the 30,000 miles already traveled between Washington, Philadelphia and New York.

Consideration is now being given to the possible operation of a daily airplane mail route between New York and Chicago, which would cut in half the time between the two greatest cities of the United States and bring the entire West, including the Pacific Coast, 12 hours closer to New York and the Atlantic sea ports.

### International Harvester to Dissolve

WASHINGTON, Aug. 10—The Department of Justice states that at the ensuing term of the Supreme Court the International Harvester Co. will dismiss its appeal from the decree of the District Court adjudging it a combination in restraint of trade and ordering its dissolution. The effect will be to leave the original decree of the District Court as the final decree in the case. In part the decree will compel the International Harvester Co. to dispose of the harvesting machine lines known under the trade names of "Osborne," "Milwaukee," "Champion," the trade names themselves, and all patterns, drawings, dies, blue prints, jigs and other machines and equipment used in the manufacture of those lines, to a responsible and independent manufacturer or manufacturers of agricultural implements; to dispose also of the plants at Springfield, Ohio, and Auburn, N. Y., where the Champion and Osborne lines are made. If not otherwise disposed of in one year after the close of the existing war the above will be sold at public auction to the highest bidder. After Dec. 31, 1919, the company will be prohibited from having more than one representative or agent selling agricultural implements in any city or town in this country.

### Propose Aeronautical Department

WASHINGTON, Aug. 10—Establishment of a Department of Aeronautics under the direction of a cabinet officer to be known as the Secretary of Aeronautics, is proposed in a bill offered to-day to the Senate by Senator Harry New of Indiana. The secretary of aeronautics would be similar to the Minister for Aeronautics as established in England. He would have authority over all the aircraft activities of the Government, direct and complete control of all matters pertaining to the designing, purchase or manufacture of aircraft and aircraft equipment intended for the use of the Army, Navy or Marine Corps. He would be given \$12,000 a year.

## Make Airplane Tour of the Middle West

**American and British Flyers to  
Travel Over Entire Central Area  
and Visit Several Fairs**

WASHINGTON, Aug. 10—Plans for the aviation tour by American and British aviators recently announced in Motor World have been completed. Major General William L. Kenly, Director of Military Aeronautics has placed Major C. I. Rhinehart in command of the party. The guest of honor will be Brig. General C. F. Lee, head of the British Aviation Mission in this country. The party will comprise several American pilots with American planes, and General Lee accompanied by several British pilots with British planes. The cities and states for the tour are as follows, subject to alteration in event of unfavorable weather conditions:

Cincinnati, Aug. 14; Dayton, Aug. 15; Columbus, Aug. 16; Cleveland, Aug. 17-18; Toledo, Aug. 19; Detroit, Aug. 20-21; Indianapolis, Aug. 22-23; St. Louis, Aug. 24-25; Kansas City, Aug. 26-27; Des Moines, Aug. 28-29; Omaha, Aug. 30-31; Minneapolis and St. Paul, Sept. 1-2-3; Milwaukee, Sept. 4; Chicago, Sept. 5-6.

The visits to Des Moines and St. Paul will come at the time of the Iowa and Minnesota State Fairs. The visit to Chicago will come during the time of the Allied War Exposition which takes place there Sept. 1-15.

### Employment Agency for Drivers

PHILADELPHIA, Aug. 10—A new conception of service in the motor truck field is held by E. J. Berlet, president of the Stability Motors Co., distributor of Atterbury trucks. In the service department, he has just organized an employment agency for truck drivers, in connection with the Atterbury service. Yesterday he placed three drivers in paying positions. The company found that with the steady increase of business, there was an urgent call on the part of car owners and users for dependable drivers and also there appeared to be a number of competent drivers looking for positions. Then the idea occurred to Berlet to make an employment agency part of the service and free to patrons.

### Overland Distributors Hold Annual Meeting

DETROIT, Aug. 10—At the annual meeting of the Simonds Sales Co., Overland distributor, it was voted to increase the capital stock from \$100,000 to \$300,000. The following officers were elected: President, Guy O. Simonds; vice-president, George Stroh; secretary and treasurer, C. A. Bennoyer. In addition to these men the following compose the board of directors: A. J. Foss, Charles Noble, Robert Hunter and C. G. Almstead. The past fiscal year ended July 31 proved a successful one for the company. A total of 2785 cars was sold with the retail business in excess of that a year ago.

# War Board to Hear Dealers August 16

## *Grant Request of National Automobile Dealers' Association for Plea on Curtailment of Industry*

WASHINGTON, Aug. 12.—(*Special Telegraph.*)—The War Industries Board and the officers of the National Automobile Dealers' Association will meet in Washington, Aug. 16, for a conference regarding the curtailment of the automobile industry. This meeting is the result of numerous telegrams from officers and members of the association requesting a meeting before the board's suggestion that automobile manufacturers convert

their plant to 100 per cent war work by January, 1919, is actually put into effect.

In an official statement the board asks the automobile dealers to understand that their conversion suggestion to automobile manufacturers was prompted by labor and material conditions that made it imperative, if the government's war program is not to be interfered with.

The board states that it appreciates

the situation of both manufacturers and dealers, and desires to work no hardship on them. It conveys a threat of possible seizure of materials now in automobile factories by stating: "It will not deprive the manufacturers of stocks of materials they have on hand unless the demands of the war situation require it, in which event the automobile industry will be treated as any other industry would be under like conditions."

## Why Hearing Was Granted

ST. LOUIS, Aug. 12.—The National Automobile Dealers' Association will make an earnest protest against the move by the War Industries Board to put automobile plants on a 100 per cent war work basis, thus eliminating the manufacture of passenger cars.

Saturday President F. W. A. Vesper of the Association sent telegrams to more than 100 dealers' associations in all parts of the country arranging for a protest by these associations to the War Industries Board.

Vesper wired to Chairman Bernard Baruch the protest of the National association and asked a hearing on behalf of the dealers who have such heavy investments. Vesper's protest and his statement for publication follow:

"It is evident from the statement issued by the War Industries Board that they believe that by converting the car factories to war work that they are taking care of the industry, because their statement says that by so doing the factories may be sure of continuation of the industry and preserving their organization, but a very considerable part of the industry is the dealer organization which is concerned in the sale and not the manufacture of automobiles.

"Dealers have no resource if they are deprived of automobiles to sell, as there is no other line of merchandise that can be taken on by the automobile dealer in its place. It is true that he can sell trucks and tractors but the production of these is so limited that it would not maintain any very great part of the dealers' organizations of the United States, which are represented by more than 28,000 dealers, whose total invest-

ment is more than \$184,000,000 and who employ a quarter of a million people.

"Owing to peculiarities of the business, the buildings in which automobiles are sold are especially built and are not adapted to any other line of business without considerable expense for rebuilding and rearranging. Therefore, some provision should be worked out which would enable the automobile dealer industry either to get enough automobiles to maintain themselves or to provide some other kind of merchandise upon which they may depend for their overhead expense, etc.

"It would be a serious calamity to

destroy a business as big and as important as that represented by the automobile dealer industry and I don't believe that the War Industries Board contemplates such a thing.

"The National association has asked for such a hearing before the War Industries Board in order to present their side of the case, which I am sure will be granted, and at such a hearing I feel confident that some basis will be arrived at which will solve the problem.

"The automobile dealers recognize the seriousness of the war situation and the necessities of the times and may be relied upon to do everything in their power to help in the crisis. At the same time they do not believe that an absolute elimination of their business is necessary."

## Dealers May Have to Change Grates

NEW YORK, Aug. 12.—It may be necessary for dealers and garagemen to change the grates in their furnaces before cold weather comes, provided their grates are such as require domestic sizes of coal, such as stove, egg or nut.

The situation receives this interpretation from conditions that have arisen in Newark within the last week. The trade association, through Secretary Claude Holgate, has been informed by State Fuel Administrator R. C. Jenkinson that he has a ruling from Washington to the effect that dealers and garagemen may have no domestic sizes and must use "the small sizes of anthracite, either straight or mixed with a small quantity of bituminous." This means buckwheat, rice sizes, etc.

The Newark grates are fitted for the larger sizes, and in many municipalities

these grates have been required because of laws against the use of soft coal. The administrator adds that the ruling means, however, that the dealers and garagemen may get domestic anthracite if there is any left after domestic users are supplied, but he has doubts as to there being any left.

F. V. Price, Jr., of the Elizabeth Automobile Co., Elizabeth, N. J., has installed an oil burner in which he burns refuse oil from crankcases, which is considered one way out of the situation.

In western homes last winter boxes were installed in the grates, permitting the use of soft coal, which is another suggested solution. Or, new grates entirely may be put in for the use of very fine anthracite, such as homes cannot use.

The Newark ruling, which was obtained from the Director of the Anthracite Di-



vision of the Fuel Administration at Washington, is not quite in accordance with the general understanding of fuel rules.

Anthracite coal is allotted for other than domestic use only in exceptional instances, for example where war plants must have it. The general industry of the country is asked to use only bituminous coal and fine screenings of anthracite coal, known as buckwheat and rice sizes.

Garages, however, will be entitled to anthracite coal if they require it. They are classed by the Fuel Administration as *public utilities*. Automobile dealers are classified as *retail establishments*, the same as any other retail store, and come under the head of domestic consumers, and are also entitled to anthracite coal.

Automobile and truck manufacturing plants will get bituminous coal and buckwheat and rice anthracite unless they are engaged in war work and anthracite coal is essential to the operation of the factory.

#### \$25,000 Appropriated for War Roads

PHILADELPHIA, Aug. 8—To aid motor truck traffic Lieutenant-Governor Frank B. McClain has induced the Pennsylvania Council of National Defense to make an additional appropriation of \$25,000 for the improvement of two stretches of road used especially for war purposes and not part of the state highway routes or within the jurisdiction of the State Highway Department. The two stretches of road are in Osborne Borough, Allegheny County, and Economy Township, Beaver County. Both heretofore have been serious hindrances to army truck travel because of their poor condition. This \$25,000 appropriation is in addition to the \$500,000 appropriated for war roads last winter.

#### Highway Warning

PHILADELPHIA, Aug. 10—With regard to the routing of Philadelphia-Atlantic City transportation by motor car the following information and warning have been issued:

"Inasmuch as construction by the State Highway Department of New Jersey is to start very shortly on a section of the White Horse Pike near Atco, it is felt that much better results will be obtained if travel between Philadelphia and Atlantic City is routed by way of Glassboro-Malaga-Buena. It is suggested that this information be given as much publicity as possible."

#### Harroun's Patent Allowed

WAYNE, MICH., Aug. 10—Ray Harroun, vice-president of the Harroun Motors Corp., has received notice from the patent office that his claim for exclusive rights to the shock absorbing steering wheel in use on all Harroun cars has been allowed. His patent has been transferred to the company.

## Car Makers Waiting to See What Occurs

### Believe Situation Serious But Are Not Yet Ready to Recognize Conditions As Definite

DETROIT, Aug. 12—Manufacturers of passenger cars have somewhat recovered from the daze which struck them as the result of the announcement made by the War Industries Board suggesting that it may be necessary to convert all passenger car manufacturing plants into 100 per cent war work by Jan. 1. Although it was at first received as a serious blow to the industry, the latter's excitement has subsided and the situation is seen with a clearer vision though still with a serious aspect.

If it is absolutely necessary for the government to utilize these plants to 100 per cent capacity, the manufacturers are ready to give them over regardless of the hardship it may cause the passenger car business and its distributing organization. The decision is not regarded as an order as yet, however, and the manufacturers are waiting to see what the outcome will be.

The War Industries Board's reply to the letter sent by the National Automobile Chamber of Commerce simply brought to a head an issue which has been brewing for some time. Pending a decisive step taken by the War Industries Board and the issuance of an official order manufacturers will continue producing cars as their ability permits.

Of course it is too early to even hazard a guess. Manufacturers think they will be permitted to maintain production, however small it may be. They do not believe the cut will be so drastic as the decision indicates until the questionnaires which have been sent out by the War Industries Board have been returned and an analysis of the situation has been made. Manufacturers do not expect to know definitely whether or not a 100 per cent curtailment will follow. It is their firm belief that plants will be engaged in war work to a greater extent but commercial production will not reach much below 25 per cent of normal.

The biggest blow will strike the dealers and their working organizations, which personnel totals approximately 250,000. Only those who have taken on other lines, however, will not feel the effects of a sudden curtailment. These probably number less than 50 per cent.

The data and information which the War Industries Board requested on July 16 has not been completed by the majority of manufacturers and according to their understanding is not due until Aug. 15. Owing to this fact very few manufacturers were able to state at this time just how much inventory they have on hand.

The Hupp Motor Car Corp. stated it had enough big parts in stock to last at least twelve months but of the smaller ones some would not last a month. The

same conditions prevail with most of the larger manufacturers. Inventories were never so unbalanced.

The Liberty Motor Car Co., however, reports a well balanced stock and is in a position to maintain production for four or five months without buying more.

The Ford Motor Co. is very reticent concerning the situation. It states that no plans have been made but that it will continue production until the government tells the company to do otherwise. It will be remembered that this company has already 75 per cent of its capacity on war work. The daily commercial production is now 750 cars, of which 350 are passenger cars.

The biggest portion of Dodge Brothers' plant is engaged on war work and further orders are constantly being added. The officials declined to make any comment on the proposition and it is difficult to state what its attitude is.

#### Goodrich Earnings Almost Double

AKRON, OHIO, Aug. 12—Net profits for the first 6 months of 1918 of the B. F. Goodrich Co., after deduction of maintenance charges, depreciation and doubtful accounts, and after all excess profits and income taxes are provided for, were \$7,150,000. This is almost equal to the profits of the company for the entire year of 1917, which amounted to \$10,544,677. The increase of profit, it was stated, was not entirely due to the increase of war work done by the company, but rather to the large increase in the whole volume of business.

At the recent quarterly meeting of the directors a 1½ per cent dividend was declared on preferred stock, payable on Oct. 1 to stockholders of record Sept. 20.

A 1 per cent dividend was declared on the common stock, payable on Nov. 15 to stockholders of record Nov. 5.

#### Dealers' Convention in Spokane

SPOKANE, WASH., Aug. 12—The Washington Automobile Chamber of Commerce, composed of automobile retailers and distributors, recently held its fourth annual convention in Spokane. The entire convention was devoted to the discussion of war-time problems in one form or another.

P. E. Sands, of the Waterhouse-Sands Co., Seattle, spoke on "Automobile War-Time Business Conditions"; A. S. Eldridge, Eldridge Buick Co., Seattle, delivered an address on "War-Time Economies."

The following officers were elected for the ensuing year: W. C. Baldwin, of the Universal Motor Co., Tacoma, president; Guy E. Riegel, Spokane, of Riegel Bros., vice-president; C. L. Moore, Seattle, re-elected managing secretary. P. E. Sands, of Waterhouse-Sands Co., was named chairman of the executive committee, with A. S. Eldridge, W. A. Wicks, H. P. Grant and E. G. Hoffman.

Following the business sessions a program of entertainment was held, including a big picnic at Spirit Lake and a banquet at the Davenport Hotel in the evening.

# What Happened in Washington About Shutting Off the Industry

WASHINGTON, Aug. 10—While the newspapers have printed a story to the effect that the motor car industry is to be exterminated on New Year's Day, there is as usual another side to the question, and when all the facts are considered, the situation is not so definite as one might believe.

Furthermore, the situation has made several rapid shifts in a comparatively short time, as it has done on several other occasions. It is true that the War Industries Board has issued a statement that the factories can be assured of the continuance of their business after Jan. 1 only by going on a 100 per cent war program. The board does not explain how this is to be carried out and does not tell the manufacturers how they are to get the stipulated 100 per cent war work.

## Appeals May Be Made

While the result seems to be that the industry is faced with a rather drastic order, it is understood that appeals for hearings will be made at least by the dealers. Whether they will be heard or not is another matter. Until the situation becomes a little more definite than it is now, it hardly seems fair to accept anything as conclusive, although there doubtless will be a considerable reduction in the number of cars regardless of what transpires during the coming weeks. The story of what has happened during the last few days follows:

Hugh Chalmers came to Washington Thursday to inform the War Industries Board of the unanimous vote of the National Automobile Chamber of Commerce to curtail passenger car production 50 per cent as against last year. He also presented a pledge which the makers are willing to give.

The N. A. C. C. meeting and vote were the result of a conference early in July between Chalmers and the War Industries Board when Bernard M. Baruch, chairman of the board, suggested that the manufacturers should get together and determine what would be a safe maximum curtailment. In voting a 50 per cent cut, the makers reached what they think is the largest curtailment compatible with industrial conditions and which they believe will allow retention of organizations and operation of business during the emergency.

Chalmers, after his arrival here, held four conferences with members of the War Industries Board. At the first on Thursday morning he presented the resolution of curtailment and the tentative pledge. At this meeting a sub-committee was appointed by Baruch, which comprised Alexander Legge, Requirements Division; Judge Edwin B. Parker, Priorities Board; George N. Peek, Finished

Products Section, and J. Leonard Replogle, of the Steel Section of the War Industries Board, to deal completely with Chalmers regarding the automobile industry.

Following the two conferences of the first day Chalmers stated that nothing definite had been done beyond the presentation of the resolution and curtailment. His statement coincided with the rather non-committal "communiqué" issued late that day by the War Industries Board as follows:

"Hugh Chalmers, representative of the National Chamber of Commerce, appeared to-day before the War Industries Board and presented resolutions adopted unanimously by the automobile manufacturers at a special meeting in Detroit Tuesday. By these resolutions the manufacturers voluntarily agreed to curtail the production of passenger cars 50 per cent beginning Aug. 1. Mr. Chalmers also presented a tentative form of pledge which the automobile manufacturers are ready to make concerning their output. The War Industries Board has appointed a committee with full power to act for the board in the matter of automobile production."

On the second day here Chalmers stated that conferences with the War Industries Board had been highly satisfactory. The board, he said, welcomed the co-operative spirit displayed by the manufacturers and was attempting to meet that spirit in turn. The 50 per cent curtailment figure was accepted by the board, said Chalmers, as a regulatory figure by which the manufacturers might guide themselves in making reductions in overhead, inventories and other similar expenses. However, he added, the board did not promise to provide steel to meet this figure. The situation though appeared optimistic.

## Met With Committee

The meetings of Chalmers with the small sub-committee allowed for close, friendly and open discussion of the various problems connected with the curtailment. Such matters as the British complete curtailment of passenger car manufacture were brought up and discussed and explained. The difference between the Ford Motor Co., which has \$400,000,000 worth of war work, and other smaller passenger car manufacturers unable to secure the war work was clearly defined.

Chalmers, just after his last meeting, was asked if any further results had developed. He replied that no decision had been arrived at and that none would be until after all of the inventories of steel now being compiled by the manufacturers were received in Washington

and checked by the War Industries Board, following which definite decisions regarding the allotment of steel to the industry would be made. Chalmers emphasized the exceedingly friendly spirit by which he had been met by the board, and was certain that all that could be done would be handled in a broad spirit by the board at the next conference, which is to take place in about 10 days.

Asked if the board would issue any further statement Chalmers said that this was answered in the negative, saying that there was nothing further that the War Industries Board could say at this time.

## Their Mind Changed

After Chalmers left the city, the War Industries Board, either just overcoming the effects of his arguments or because of a slow, deliberative policy, suddenly awakened with new ideas on the subject and addressed a letter to the New York office of the N. A. C. C. demanding that the industry get on a 100 per cent war work basis. This letter together with comment was issued to the general press late at night after Chalmers had left the city. The letter accepts the spirit shown by the manufacturers and is in accord with Chalmers's statement that no material will be furnished passenger car makers until their inventories of steel are at hand. But the letter goes further, completely upsetting the hopes of Chalmers, stating that the 50 per cent cut is only a step, and that further curtailment is inevitable, and that the only certain method for continuance of the automobile industry is to take on 100 per cent war work by Jan. 1, 1919. The complete text of the War Industries Board statement, including the letter, follows:

"The sub-committee appointed Thursday, Aug. 9, with full power to act for the War Industries Board concerning the output of automobiles, makes known its position in the following letter to the National Automobile Chamber of Commerce:

"We are in receipt of and have given very careful consideration to your communication of Aug. 8 embodying the resolutions passed at your meeting at Detroit, Tuesday, Aug. 6. We note that the manufacturers have voluntarily agreed among themselves to curtail the production of passenger cars 50 per cent. While this is clearly a step in the right direction and furnishes a basis for each and all of the manufacturers, without further delay, to make appropriate reductions in selling, general and overhead expenses, still it is only a step and further curtailment is inevitable.

"Fairness to your industry impels us

to state frankly that the situation as it is presented to us to-day indicates very clearly that there will be little, if any, of the principal materials required in the construction of passenger cars available for non-war industries after the war requirements shall have been provided for, and the War Industries Board cannot at this time make any promise whatsoever regarding the supply to your industry of steel, rubber or other materials for any definite period in advance.

"We strongly believe that it is to the best interest of your members and all other manufacturers of passenger automobiles to undertake to get on 100 per cent war work as rapidly as possible and not later than Jan. 1, 1919, for in no other way can you be sure of the continuance of your industry and the preservation of your organization.

"We regret that we are not in a position at this time to give you a more definite reply to your communication of the 8th inst., due to the fact that the date and information which on July 16 we requested you to promptly furnish us has not yet been received. As soon as received prompt and appropriate action will be taken, of which you will be immediately advised.

"No material will be furnished to any passenger automobile manufacturer until it has filed with this board a sworn statement embodying the information requested on July 16, coupled with an agreement to furnish this board with such additional information from time to time as it may require.—War Industries Board."

"At a meeting of the War Industries Board on Thursday representatives of the National Automobile Chamber of Commerce presented resolutions adopted at Detroit in which the manufacturers of automobiles voluntarily agreed to cut their production 50 per cent beginning with August of this year. Reference in the above letter to the request made on July 16 for certain information from the automobile manufacturers relates to the inventories of the steel which each manufacturer had on hand at that date."

#### Rates Ra'ise in Hartford

HARTFORD, CONN., Aug. 10—War, the high cost of living, shortage of labor and various other things, are blamed for the increase in the cost of garage and repairshop charges. A single dollar now buys just one hour of so-called labor. A little over a year ago the price was 75 cents an hour, and since that time there have been advances up to 90 cents.

#### Winther Building Truck Plant

KENOSHA, WIS., Aug. 12—Work has begun on the construction of the new plant of the Winther Motor Truck Co. at Kenosha, Wis. It will be of brick and steel, 150 x 350 ft., and with complete equipment will represent an investment of approximately \$125,000. The company is now operating in leased quarters at Winthrop Harbor, Ill., just south of Kenosha.

## Tax on Cars Is Cut by New Arrangement

### Now Proposed to Base Rate on Old Cars on Horsepower Instead of Original List Price

WASHINGTON, Aug. 9—Lower taxes on automobile and truck users of the nation were agreed upon yesterday by the Ways and Means Committee. The new automobile tax is based on horsepower instead of original cost price. It will raise \$50,000,000 instead of the \$100,000,000 estimated on the earlier tax proposal. The tax agreed upon yesterday applies to users of both passenger cars and trucks, and was as follows:

23 hp. or less.....	\$10.00
24 to 30 hp.....	20.00
31 to 40 hp.....	30.00
More than 40 hp.....	50.00

The original tax as proposed, a tax based on the original cost of automobiles and trucks, was withdrawn because of considerable opposition. Under the tax planned owners of cars 5 to 6 years old would have been compelled to pay a higher tax in many instances than owners of cars 1 to 2 years old.

It is expected that there will be some opposition to the new tax proposed owing to the fact that it will lay a heavy burden on the users of motor trucks, which are at no time considered as other than utilitarian.

#### Lower Fees in St. Louis

ST. LOUIS, Aug. 12—The automobile license law effective in this state at the beginning of the present year has reduced the motor car state fees one-half, beginning Aug. 1, the half-way point of the year. Nov. 1 the fee will drop to one-quarter of the full year.

#### Cash Basis Only

HARTFORD, CONN., Aug. 10—As a war measure credits are being shortened and repair work and parts are cash. Gasoline is now sold only for cash, regardless of who the customer may be. This latter feature has caused a lot of annoyance in some quarters, but the gasoline dispensers argue the times demand a cash transaction.

#### Overland Dealers Organize

DECATUR, ILL., Aug. 10—The Overland Distributors' Association of Illinois and Missouri was formed here last week. G. M. Berry, assistant general sales manager, and A. C. Barber, division sales manager, were on hand from the factory, while H. R. Henry, wholesale sales manager from the St. Louis office, attended. W. C. Starr, Overland distributor for Decatur, was elected secretary, and the other offices will be filled at the next meeting to be held at Bloomington Aug. 27.

Addresses were made at the meeting by Manager Berry, who spoke on relations of the factory to the distributor and dealers; Barber spoke on "Future Production"; Henry on "Town and Vicinity Contracts and Their Success"; George Eldridge, president of the First National Bank at Decatur, spoke on "The Banker's Relation to the Automobile Industry"; W. H. Taylor, Overland distributor, spoke on "Economy and Conservation Applied to Present Conditions," and D. R. Miller, distributor at Peoria, spoke on "Standardization of Freight and Delivery Charges." After the meeting the distributors visited the Comet and Pan-American factories.

#### New Truck from St. Louis

ST. LOUIS, Aug. 12—The Universal Motor Truck & Traction Engine Co. of this city has completed a demonstration truck designed by Daniel T. Timberlake. The truck has a short turning radius, offers optional location of motor and has steering aid from the motor. A factory is planned at St. James, Mo. Edward Bray, of St. James, is president of the company. The company has offices in the Syndicate Trust Building, this city.

#### Wilmington Has No Cars

WILMINGTON, DEL., Aug. 12—Wilmington is experiencing a serious shortage of passenger cars. Some of the agencies have none of some makes and they are unable to get any, notwithstanding the fact that they stand ready to drive them in, which they have been doing for some time. At nearly all of the agencies there is a waiting list of orders, which shows the hold some makes of cars have on the public. How the difficulty will be overcome the dealers do not know. Used cars are being boosted because of the trouble, but this, of course, does not give the desired relief.

#### Cars Pay City's Taxes

LAWTON, OKLA., Aug. 10—This city has now more than 500 automobiles in the livery service, and almost the entire expense of running the city government will be collected from the fees that are paid in by the owners of the cars. The licenses are \$15 for a five-passenger car, \$20 for a seven-passenger and \$25 for omnibuses. Ordinarily the revenue from collections average about \$29,000 a year, but now the city officials find they have almost \$50,000 more than they need and not a cent of taxes will have to be levied for the year commencing July 1.

#### Page Mr. "Co-op"

ST. LOUIS, Aug. 12—An "Owners' Protective Association" has been circulating car owners here, asking that they join the association to get benefits of co-operative buying. One of the circulars fell into the hands of the police through an accessory dealer. The police could not find the "association" at the address given and the post office has been returning all subsequent letters.

## War Board to State Who May Buy Trucks

**Is Preparing Circular Which Defines  
"Essential Uses"—Priority to  
Be on This Basis**

WASHINGTON, Aug. 12—The War Industries Board is preparing a circular which will define "essential and non-essential uses of motor trucks."

And on this basis will be determined the steel and coal and other priority ratings of manufacturers. The maker who supplies trucks for "essential" and war uses will stand higher than the maker who does not.

The circular states that the demand for iron and steel is such that no guaranty can be made to the motor truck or any other industry that its steel or other requirements will be met.

However, the members of the motor truck industry, states the circular, who comply in good faith with the pledge of co-operation will be accredited the class B-4 rating in procuring their supplies of fuel, iron and steel. The B-4 rating insures priority and places the motor truck well up in front in the list of very important steel consumers.

The Priority Division will receive application from any manufacturer of motor trucks for a place on the preference list for fuel, in each instance taking into consideration the fuel situation of the manufacturer, the amount of his direct and indirect Government business, and the uses to which the remainder of his produce is being devoted.

Motor trucks used directly or indirectly for war purposes are war essentials and their production for such purposes will be facilitated.

Motor trucks employed in essential uses in civilian industry constitute an important transportation medium, and curtailment for such uses should be avoided as far as possible.

Manufacturers of motor trucks whose factories are exclusively devoted to producing products absorbed directly or indirectly by the Government or in other uses of essential importance will be given class B-4 rating for steel requirements, conditioned, however, that the manufacturer will observe a pledge of co-operation and the regulations of the Priority Board.

### To Help Ohio's Roads

COLUMBUS, Aug. 10—An important conference between J. L. Morrill, executive secretary of the Ohio Branch, Council of National Defense; W. A. Alsdorf, head of the Good Roads Federation in Ohio, and Raymond Beck, of the Highway Transportation Committee, was held in Columbus Aug. 9 to take action relative to developing and systematizing highway transportation in the Buckeye State. The matter was brought to the attention of Governor Cox, who is very enthusiastic over the movement.

W. A. Alsdorf has been picked for gen-

eral chairman of the committee. It is the plan to name five regional chairmen and thus to divide the state into five districts. These regional chairmen and the entire personnel of the committees will not be announced until later.

The work of this committee will be along five different lines or sub-divisions. They are first, rural motor transportation; return loads bureaus; intra-city transportation; statistical department and encouragement of inland waterways. The last sub-division has to do with establishing barge lines on the Ohio and other navigable rivers and Lake Erie, and supplying these barge lines with motor transportation for the movement of freight.

Chairman W. A. Alsdorf is not yet ready to make public his entire plan, which is quite comprehensive. He believes that much can be done toward relieving congestion on the railroads by carrying forward the work outlined in the above sub-divisions.

### No More Oxygen Burning

HARTFORD, CONN., Aug. 10—No more oxygen carbon burning is the order that has gone forth among the Hartford repairshops for the reason that the Government conservation plans permit the use of oxygen for welding only. Carbon burning has been a big item with the Hartford shops, and appealed to owners because it was quick relief from an annoying trouble.

### Consolidate Two Companies

SPOKANE, WASH., Aug. 6—To facilitate the rendering of factory-to-owner service to users of its cars the Willys-Overland, Inc., has consolidated its two subsidiary Coast companies. The new company, which will be known as the Willys-Overland Pacific Co., has absorbed the Willys-Overland of California and the Overland-Pacific, Inc., the latter now operating in Washington and Oregon.

The new company will serve nearly all territory west of the Rockies, including Washington, Oregon, California and parts of Montana, Idaho, Nevada and Arizona. Frank C. Riggs is vice-president and general manager of the new company, and A. W. Barber will have charge of the Spokane branch.

### Puritan Gets Broc

DETROIT, Aug. 10—The latest addition to the long list of Orphan cars, of which the Puritan Machine Co. supplies parts, is the Broc Electric, formerly of Saginaw, Mich. The entire stock has been removed to Detroit.

### Ford Assembly in Columbus Closed

COLUMBUS, OHIO, Aug. 12—The Ford assembling plant in Columbus has been closed down temporarily on orders from the head office at Detroit. It is announced that 15 assembling plants have been closed, leaving six in operation.

## Return Loads Makes Progress in St. Louis

**Data as to Facilities Being Distributed by Chamber of Commerce  
Man—Time Cards Essential**

ST. LOUIS, Aug. 12—Under the leadership of the traffic department of the Chamber of Commerce the return loads bureau is making definite progress. During the last week P. W. Coyle, of the Chamber of Commerce, has sent to local shippers a letter giving the data concerning time-tables and warehouse facilities of five truck lines to towns 20 or more miles distant from St. Louis. A meeting has been called for this week, at which bills of lading and rate data will be discussed by the express line owners and managers of local truck companies.

It has been developed that the chief drawback to shipments by truck lines has been the failure to observe the time card. Also that the chief fault with a return load from the smaller city was the failure to maintain a warehouse where a bill of lading could be issued. These defects can be remedied.

H. R. Brashier, assistant to Traffic Commissioner Coyle, has taken up the warehouse work. It is expected that several of the St. Louis warehouses will be consolidated. Country produce on the Missouri side of the river and coal on the Illinois side have been offered for return loads.

At the last meeting W. F. Rehbein, branch manager here for the Garford Motor Truck Co., was chosen chairman of the Joint Interurban Motor Truck Service Committee.

### To Regulate Private Garages

HARTFORD, CONN., Aug. 10—A new city ordinance is being put through to regulate backyard garages. All garages must be 20 ft. away from the dwelling and have concrete floors and fireproof roofs. The new ordinance will curb the cheaply constructed garage in the residential sections.

### Gas Up in Hartford

HARTFORD, CONN., Aug. 10—Gasoline has advanced a half cent at wholesale and the retailers have added another cent to the price. Twenty-seven cents is the prevailing price, though some dispensers are charging 28 cents. The suggestion is offered that private owners buy of the various stations rather than stock up themselves.

### Here's an Idea

DETROIT, Aug. 10—Detroit wholesalers who are delivering goods to retailers by motor truck have started a movement to save waste time of these trucks. They are sending to retailers to whom goods are delivered small cards with the regular correspondence calling their attention to the waste time that may result if trucks are kept waiting.



## Production Reduced in the Detroit Zone

**Some Are at 25 Per Cent—Some Outputs at Point Where Dealers Are Getting Nothing**

DETROIT, Aug. 9—The most marked change in this territory in the passenger car manufacturing field is the gradual reduction of production. Many manufacturers are nearing the 25 per cent line of production; some have already arrived at this figure. Whether this output will be reduced still further is a matter of conjecture. Manufacturers are reticent about making any prophecies regarding the future. They will continue production up to the limit of their ability to secure materials, many feeling optimistic about the situation, and believe relief of the strain under which they are laboring is close at hand.

Production of the Willys-Overland, Inc., averages 400 daily; that of the Paige is 35; Reo has reduced its production 50 per cent compared with a month ago. It is now 40 cars per day, while the output of the speed wagon is 25 daily. Buick's production is in the neighborhood of 175 daily; Chalmers, 50; Harroun is reported at 10; King averages also 10; Liberty produces 7, and Scripps-Booth, 40. Ford passenger cars come out at the rate of 350 a day and the trucks at 400. Packard, Hupp, Briscoe and Columbia production figures are the same as reported a month ago.

Production of the Cadillac goes entirely to the Government. This was curtailed Aug. 1 from 40 cars daily to 25. This latter figure represents what was going to the Government. With the curtailment of production it is apparent that no cars are going into the commercial field from this plant.

### Trucks to Help Crop Shipment

HELENA, MONT., Aug. 10—Motor trucks will be used to solve the transportation problem of Carter County in southeastern Montana, 60 miles from a railroad. The county has had a bumper crop this summer, and the only way the grain can be brought to the market is by team and wagon, and if this is done the farmers would not have time to prepare their land for next year's crop. The Montana Railroad Commission has recommended to Secretary McAdoo the installation of a fleet of motor trucks to solve the transportation difficulties of the district.

### New Acme Distributors

CADILLAC, MICH., Aug. 10—The Acme Motor Truck Co. has made distributing connections in recent weeks with the following to represent the Acme in their respective territories: I. F. Saunders, Roanoke, Va., as Acme Motor Truck Sales Co.; Commercial Truck & Tractor Co., Petersburg, Va.; John E. Garcia,

New Orleans, La., as Acme Motor Sales Co.; J. P. Nicholson, 1532 Michigan Avenue, Chicago, as Acme Truck Sales Co.; J. W. Newcomer, Clarksburg, Va.; Overland-Louisiana Co., Shreveport, La.

### Pennsylvania Issues 350,000 Licenses

PHILADELPHIA, Aug. 9—The issuance of state automobile licenses now has virtually reached the 350,000 mark. While there have been numerous issues of transfers of ownership, many cars are being registered by the State Highway Department. The bulk of such registrations are for the motor truck and the smaller type of passenger cars.

### Wisconsin-Duplex Starts

OSHKOSH, WIS., Aug. 10—The Wisconsin Duplex Automobile Co., on Aug. 1 began quantity production of a single type of 1½-ton commercial car employing a quadruple drive transmission system, which has been undergoing exhaustive tests for more than 2 years. Five trucks are now coming through and the next group will be ten, gradual increases being made until the regular group reaches twenty-five cars.

### Acme Motor Truck Enlarges Plant

CADILLAC, MICH., Aug. 10—The Acme Motor Truck Co. will increase the size of its plant. The following additions have been built this summer: A wood-working and body shop, 65 x 80; an addition to the assembly building, 65 x 96; a heating and powerplant, 46 x 80; an office, 80 x 118; two washrooms, 12 x 30, and a dining room, 13 x 46. Another addition to the body department is contemplated in the very near future, which will be 65 x 80.

### New Chicago Peerless Distributor

CHICAGO, Aug. 10—Distribution of Peerless cars and trucks in Chicago and environs hereafter is to be handled by the Magnetic Motors Corp., which also handles the Owen Magnetic, the Deering Magnetic and the Rauch & Lang electric.

### New Home for Selden Distributor

NEW YORK, Aug. 10—The Manhattan Motors Corp., Selden truck distributor in New York, has moved into a new sales and service station at 238 to 256 West 19th Street. Heretofore the Manhattan Sales Corp. has shared quarters with the Vim Motor Truck Co. at 56th Street and Broadway. Hereafter these two lines are to be separate, the Vim continuing at the old showroom.

### Ben Hur Plant Acquired by Government

CLEVELAND, Aug. 10—The plant of the defunct Ben Hur Co. at Willoughby has been leased by the government for the duration of the war, and the factory is already being placed in readiness for the work.

## Dealer Profiteers Under Official Eye

**Can't Play a High-profit Game without Getting Uncle Sam on Their Respective Necks**

WASHINGTON, Aug. 9—Manufacturers, wholesalers, retailers or other dealers having a regular stock in farm equipment, including tractors or tractor plows, who sell these out at replacement value during rising prices without replacing or intending to replace the stock, and sell at replacement values when prices are falling, will be considered profiteers, according to a statement made by the Office of Farm Equipment Control of the United States Department of Agriculture.

Farm equipment held, contracted for or arranged for by manufacturers, wholesalers, retailers or other dealers in excess of the reasonable requirements of the businesses, for use or sale in a reasonable time, will constitute hoarding.

The prices of farm equipment are more or less seasonal, but if the price should rise or fall during the season, then, to be consistent, a person who wishes to sell on the basis of replacement values would be obliged to sell at a loss if the price fell. Equipment carried over from one season to another—that is, the residual from a previous season's reasonable supply—should be considered in the same manner. Therefore if persons have sold at replacement values they must continue to do so when a drop in prices comes, and carry the same amount of stock as in the beginning throughout the period of the high prices in order not to profiteer.

In short, says the statement, it will not be considered profiteering if farm equipment is sold on the basis of replacement prices, provided the goods sold are replaced at once at replacement prices and this practice is continued during the period of high prices caused by the war.

It will be considered hoarding if any manufacturer, wholesaler, retailer or other dealer holds, contracts for or arranges for a quantity of farm equipment in excess of the reasonable requirements of his business for sale by him over a reasonable time. Manufacturers, wholesalers, retailers and other dealers finding themselves inadvertently in this position should sell at cost plus a fair usual profit.

### N. Y. to Announce Approved Headlamp Devices Sept. 1

ALBANY, N. Y., Aug. 10—Secretary of State Francis M. Hugo is not expected to be able to announce the full list of non-glare headlight devices until about Sept. 1. About forty devices are waiting at the Electrical Testing Laboratories, East End Avenue and Eightieth Street, New York, for test. The tests will be in charge of W. P. Little, who will begin the work as soon as testing reflectors are received.

## Prominent Tradesmen Assume New Duties

### Resignations and Promotions Place Workers in New Places

**Paul J. Barnard**, sales manager of the Walker Mfg. Co., Racine, Wis., manufacturer of lifting jacks and other accessories, has resigned to accept a commission as a captain in the quartermaster's department of the United States Army. Capt. Barnard is 30 years old and originally came to Racine as sales manager of the Harvey Spring & Forging Co.

**Walter Spratt** has been appointed manager of the distributing branch and service station of the Fisk Rubber Co., at Eau Claire, Wis., to succeed A. W. Walters, resigned.

**James A. Brady** and **W. N. Littlewood**, principal owners of the Brady-Littlewood Co., Madison, Wis., have resigned their official connections with the company because of their entrance into Government service. Littlewood is directing the work of the special school for army motor mechanics conducted by the Government at the University of Wisconsin, Madison, and Brady is doing similar work elsewhere. George H. Pregler has assumed general charge of the Brady-Littlewood garage.

**Robert H. Thiemann**, who resigned as secretary and treasurer of the Raab-Thiemann Co., Ford dealer, Sheboygan, Wis., to enlist in the army, has been promoted to the position of instructor in gas engines and motor cars, being one of seven men out of 600 in training at Camp Hancock, Ga., to receive such appointment. Thiemann expects to be stationed at Camp Hancock for several months. He is devoting his entire time to the preparation of charts and giving lectures to incoming classes of the ordnance supply department.

**J. N. MacDonald** of the sales force of the A. C. Hine Co., Hartford, Conn., has resigned to become manager of the Texas Co. local department.

**John H. Erben**, assistant manager of the Hartford office of the B. F. Goodrich Co., has been appointed manager to succeed E. C. Geer, Jr., who has gone into the banking business.

**D. A. Randall** of Providence succeeds E. J. Smith as manager of the Hartford branch of the Goodyear Tire & Rubber Co. The latter joins the solid tire department and will travel through New England.

**John A. Campbell** has been named district sales manager for Southern Illinois by the Davie Motor Car Co., with headquarters in St. Louis.

**Arthur K. Snowden**, who two months ago gave up law practice to re-enter motor selling, has been made sales manager and assistant general manager of the Federal Truck Co. of St. Louis.

**Frank E. Lindsey**, recently city sales manager for the Moon Motor Car Co., has joined the staff of the Tate-Gillman Motor Car Co. of that city.

**F. G. Quinn**, for years a real estate operator in St. Louis, has entered Motor Row in that city as a manufacturers' agent, selling the Reliance steering-wheel lock and the Twin Fire Spark plug at 1620 Locust street, St. Louis.

**Garfield List** has been appointed district manager of the United States Tire Co., 329 North Broad Street, Philadelphia. His territory aside from the Philadelphia branch will include Richmond, Va.; Wilmington, Del.;

Reading, Harrisburg, Wilkes-Barre, Allentown and other nearby branches. He has been with the company since 1908.

**C. L. Alexander**, for the past seven years engaged in the automobile business in the sales department of Dodge Brothers and Chalmers, resigns his position as sales office manager for the latter concern August 15 to assume his new duties as expert in business administration in the Detroit District of the Ordnance Department.

**R. T. Hodgkins** has been made general sales manager of the Cleveland Tractor Co., Cleveland. Hodgkins, prior to making this connection, was for a number of years head of the sales organization of the Holsting Machinery Department of the Yale & Towne Mfg. Co., New York, and for the past four years general sales manager of the Studebaker Corp. Hodgkins succeeds W. J. Urquhart.

### Only Dealer Tractors Exhibits at Fairs

**CHICAGO, Aug. 9**—The Tractor Demonstration Committee of the National Implement and Vehicle Association got together informally on the demonstration grounds at Salina and decided to give no official sanction to state fair exhibits of tractors this year. This means that none of the manufacturers of tractors will make a distinct factory exhibit. Local representatives and branch houses, however, will be permitted to make exhibits at fairs in their respective localities if they so desire.

### Catering to Women

**ST. LOUIS, Aug. 10**—The Kardell Motor Co. has installed in its enlarged warehouses a complete women's restroom. The room has all of the facilities of a hotel parlor and is secluded from public view. The undertaking was chiefly for the accommodation of Reo dealers. During the last few months most of these dealers within a 200 mile radius have been coming to the city in their passenger cars, accompanied by women members of the family. This room was prepared with a view of supplying a place where the women could prepare for their shopping tour downtown and also for the trip home after shopping. Reo tourists will, of course, be welcome.

## Montreal Plans Big Automotive Exhibit

### After Trade Association Quits Un- organized Interests Take Up Ex- hibit Idea—Kirby May Manage

**MONTREAL, Aug. 10**—Strong efforts are being made by interests in and out of the automotive trade in this section to stage a big automotive exposition in Eastern Canada early in 1919, the time of the usual automobile show of the past, which has practically been abandoned by the automobile people. Ever since the war started Montreal held a show, and its trade association maintained its activities, but a few months ago the association voted to discontinue for the period of the war and closed its headquarters.

Since then the matter of the annual automotive exposition has been much discussed, and various interested people have advocated a large exposition that would include all automotive products, cars—if there are any—trucks, tractors, farm lighting outfits, farm machinery and equipment. Canadian-made goods would be a feature.

The board of directors of the Montreal Automobile Association, a club organization, is considered lending its endorsement to the plan. It is also considering having the exposition put on under the management of Thomas C. Kirby, the M. A. A. secretary, who was secretary of the Montreal Automobile Trade Association and who managed the previous Montreal exhibitions.

It is contended that the continuity of trade progress should not be broken by discontinuing exhibition activities, regardless of profit, and, in order to make good on this basis, it is proposed that all profits of the exposition be given to the Montreal Soldiers' Wives' League, with independent auditors appointed to check the finances and assure patrons of strict adherence to this plan.

### Automotive Securities Quotations

	Bid	Asked		Bid	Asked
*Ajax Rubber Co.....	62½	63½	*Maxwell Motor Co., Inc., 1st pfd.	55	56
*J. I. Case T. M. Co., pfd.....	82	85	*Maxwell Motor Co., Inc., 2nd pfd.	20½	21½
Chalmers Motor Co., com.....	3½	5½	Miller Rubber Co., com.....	110	112
Chalmers Motor Co., pfd.....	30	40	Miller Rubber Co., pfd.....	96½	98½
*Chandler Motor Co.....	88½	89½	Packard Motor Car Co., com.....	125	
Chevrolet Motor Co.....	134	138	Packard Motor Car Co., pfd.....	92	97
*Fisher Body Corp., com.....	37½	39½	Paige-Detroit Motor Car Co., pfd.	7	8½
*Fisher Body Corp., pfd.....	89	90	Peerless Truck & Motor Corp.....	13	17
Fisk Rubber Co., com.....	60	63	Portage Rubber Co., com.....		120
Fisk Rubber Co., 1st pfd.....	100	103	Regal Motor Car Co., pfd.....		
Fisk Rubber Co., 2nd pfd.....	78	82	†Reo Motor Car Co.....	14½	15½
Firestone Tire & Rub. Co., com.	104	106	*Saxon Motor Car Corp.....	6½	8½
Firestone Tire & Rub. Co., pfd.....	92	94	Springfield Body Corp., com.....		
*General Motors Co., com.....	153	154½	Springfield Body Corp., pfd.....		
*General Motors Co., pfd.....	81½	81½	Standard Motor Construction Co.	12	14
*B. F. Goodrich Co., com.....	45½	46	*Stewart-Warner Speed. Corp.....	57½	58½
*B. F. Goodrich Co., pfd.....	98½	100½	*Studebaker Corp., com.....	43¼	44¾
Goodyear Tire & Rub. Co., com.	159	162	*Studebaker Corp., pfd.....	85	90
Goodyear Tire & Rub. Co., pfd.....	97½	98½	Swinehart Tire & Rubber Co.....	55	55
Grant Motor Car Corp., com.....	2¼	3¼	United Motors Corp.....	32	32½
Hupp Motor Car Corp., com.....	3	4	*U. S. Rubber Co., com.....	61	62½
Hupp Motor Car Corp., pfd.....	79	82	*U. S. Rubber Co., pfd.....	105	106
International Motor Co., com.....	28	32	*White Motor Co.....	43¼	45½
International Motor Co., 1st pfd.	55	65	*Willys-Overland Co., com.....	19½	20
International Motor Co., 2nd pfd.	35	45	*Willys-Overland Co., pfd.....	82¼	83
*Kelly-Springfield Tire Co., com.	49	51½			
*Kelly-Springfield Tire Co., 1st pfd.	80	87			
*Lee Rubber & Tire Corp.....	21¾	22			
*Maxwell Motor Co., Inc., com...	26	26½			

\*At close Aug. 14. Listed N. Y. Stock Exchange. †Par value \$10.

## Packard and Dodge Salesrooms Merged

**Combined Under One Roof in Boston  
but Sales Organizations Are  
Operated Separately**

BOSTON, Aug. 5—On Sept. 15 Packard and the Dodge Brothers motor cars and trucks will be sold under one roof in Boston, bringing about one of the biggest consolidations to cut down overhead in the country. A few weeks ago the announcement was made that they had consolidated at Worcester, and the present announcement will dissipate a lot of gossip about what Alvan T. Fuller intended to do in Boston, which comprised everything from running for governor to abandoning the motor industry all together.

Under the plan, the C. S. Henshaw Co., handling Dodge Brothers cars, will concentrate with the Packard forces in the big Packard building, 1079 Commonwealth Avenue. It is not a merger of the two businesses, for each company will keep its working forces intact, with the same executives in charge of each department.

The Henshaw company has had to maintain three buildings to meet the growth of the sale of cars and trucks. Two of these will be vacated, the big salesrooms on Boylston Street, the largest on that thoroughfare, and the service station on Beacon Street. The newly opened service station on Commonwealth Avenue will be retained.

The Packard salesrooms will remain as they are, and the Dodge Brothers cars will be sold in the easterly wing of the Packard plant, where used Packard cars and trucks were sold. This building, rumor had it, was going to be turned over to the Government. The plan of consolidation worked so well at Worcester with these two firms that the Boston plan was the result, and it will save the Henshaw company some \$25,000 a year overhead expenses.

### 13,000 Trucks in Connecticut

HARTFORD, CONN., Aug. 10—There have been registered up to July 1 in the State of Connecticut 61,000 passenger cars, 13,400 commercial cars, 2800 public service cars, 4000 motorcycles and 1300 side cars. One hundred and fifty dealers are listed.

### Agree to Discontinue Free Service

OKLAHOMA CITY, OKLA., Aug. 10—The tire agencies and service stations have agreed to discontinue free road service and have agreed on a schedule of prices for all road service of 50 cents for ten-block calls and \$1 for over ten blocks in the city. Country service will be still higher. Free service will still be had at the stations of the members of the association. The following dealers have signed the agreement: Erickson Tire Co., Lombard Tire Co., Oklahoma

& Texas Tire Co., Frederickson Tire Co., Baily Co., Mid-West Co., Hall Bros. Tire Co., Rogers Lenglade Vulcanizing Co., Hildreth Tire Co. and the Walburt Vulcanizing Co.

### One Company Won't Raise Gas

PHILADELPHIA, Aug. 8—The Atlantic Refining Co. and other large oil interests in Pennsylvania and Delaware territory have decided not to take advantage of the permission given by the Fuel Administration at Washington to increase the wholesale price of gasoline. The reason is given in a letter made public by Richard D. Leonard, general manager of domestic sales of the Atlantic Refining Co., which reads as follows:

"For some time past the price of gasoline to the dealer for Atlantic gasoline has been on the basis of 10 per cent off this company's retail selling price, which nets the dealer a turnover of 11 per cent, assuming that the gasoline is sold at the same retail price as that established by this company.

"As far as is known, or as published information indicates, this margin of profit, which prevails practically generally throughout Pennsylvania and Delaware, is the best margin of profit prevailing in any of the eastern states, and is considered by the oil companies who are operating under the same schedule of prices and by dealers in general as the most reasonable and most satisfactory schedule of prices prevailing anywhere at this time. After careful consideration, this company has concluded that it is inadvisable to make any change in the retail selling price of gasoline and in consideration of the fairness of the present schedule of prices which it has in effect with garages and dealers that it would not make any change at this time in its price of gasoline which would, in effect, cut down the margin of profit with the dealer."

### Cole Winner in Cuban Race

INDIANAPOLIS, Aug. 12—A Cole eight won the Cuban championship for stock cars of 301 to 400 cu. in. displacement at the races held on the Oriental Park track at Havana, July 6. The entries included three Stutzes, one Buick, three Cadillacs, a Mercer, a Lancia, a Premier and Hispano-Suiza. It was a 30-lap race. The Cole covered this distance of 30 miles in 29 min. and 5 sec.

### Jordan Pays 86 Per Cent

CLEVELAND, Aug. 8—The Jordan Motor Car Co. Aug. 1 paid a dividend of 8.6 per cent to the holders of the original Jordan preferred.

Jordan production, which was originally limited to 2000 cars annually, has proceeded at that rate since the first cars were shipped, yet Aug. 1 the company was several hundred orders behind in deliveries.

The company has been turning over its capital practically every 30 days, and in the July period the earnings were at the annual rate of 160 per cent on the capital invested.

## Wisconsin Dealers Help With Harvest

**Release Their Men for Work on the  
Farms as Measure of Co-  
operation for War Aid**

MADISON, Aug. 10—Dealers and garagemen of this city, state capital of Wisconsin, have gone perhaps farther in war conservation work than those of most other cities by releasing their employees who are physically fit for such work, to work on the farms in the immediate vicinity of Madison during the rush of the harvesting season. The men are being released for two or three days at a time, depending upon the urgency of the calls for farm help. They have agreed to accept whatever wage is paid by the farmer for their services.

The movement resulted from a number of conferences held by the dealers' section of the Madison Association of Commerce, comprising all of the dealers and garage owners of Madison. It was decided to enter into an arrangement with the United States Employment Service, through the Madison office, whereby calls for men be made to the employers and they select members of their staffs to respond.

The dealers' section includes oil and tire dealers and, in fact, all interests allied with the automotive industry. The action was given wide publicity through the medium of a large display advertisement in the Madison newspapers, in connection with the announcement of the adoption of the war conservation program of the National Automobile Dealers' Association, curtailing hours of service, eliminating free service, enforcing a strictly cash basis, etc.

Louis F. Schoelkopf, president of the Madison Association of Commerce, and one of the pioneer dealers and garagemen of Madison, is given credit for the origination of the idea of sending mechanics to the harvest fields. A survey of the employees of garages and repair shops showed that a great many of the men have had farm experience and are competent to assist threshing gangs and shocking crews. Thus they are able to command practically the same wages as skilled farm laborers. The farmers have been quick to avail themselves of the help thus provided and glad to pay top-notch wages for this class of work.

The present month is the most active harvesting period in southern Wisconsin and more calls are being received than can be filled.

### Transport Truck Elects Officers

MOUNT PLEASANT, MICH., Aug. 10—At the first directors' meeting of the new Transport Truck Co., held July 27, the following officers were elected: President and director of sales, M. A. Holmes; first vice-president and chairman of board of directors, H. E. Chatterton; vice-president and treasurer, A. E. Gorham; secretary, W. D. Hood.

# Specifications of the Leading Cars

# MOTOR WORLD GUIDE

Revisions Are  
Made in Table  
Every Week

Model	Motor	S. A. E.	Ignition	Carburetor	Starting	Clutch	Gearset	Wheelbase	Tires	Trim	2- Passenger	5- Passenger	7- Passenger	Coupe	Sedan	Limousine	Detachable Top
ABBOTT 4-42	6-31x5 29.4 Remy		Stmberg	Stmberg	Remy	DD	3	122	34x4	SS	\$1875	1875	1875	2375	2375	2375	2375
ALLEN Series 41	4-31x5 22.5 Conn		Stmberg	Stmberg	A-Lite	D	3	112	32x4	SS	11145 \$1195	11145	1195	1395	1395	1395	1395
AMERICAN B	6-31x5 23.4 A. Kent		Stmberg	Stmberg	West	DD	3	122	32x4	SS	1645	1895	1895	1895	1895	1895	1895
ANDERSON 20	6-31x4 25.3 Conn		Stmberg	Stmberg	Wet	DD	3	120	33x4	SS	**1465			2165	2165	2165	2165
400-F	6-31x5 29.4 Boech		Stmberg	Stmberg	Wet	DD	3	120	33x4	SS	**1925						
APPELSON	6-31x5 33.8 Remy		Johnson	Johnson	Bijur	DP	3	130	34x4	SS	12850	12850	12850	4250	4250	4250	4250
8-18	8-31x5 33.8 Remy		Johnson	Johnson	Bijur	DP	3	130	34x4	SS	12850	12850	12850	4250	4250	4250	4250
Anniversary																	
AUBURN 6-31x4	25.3 Remy		Raff	Raff	Remy	DP	3	120	34x4	SS	1445	1445	1445	2550	2550	2550	2550
6-31x5	29.4 Deleo		Raff	Raff	Deleo	DP	3	131	35x4	SS	1785	1785	1785	2550	2550	2550	2550
6-44	22.5 Conn		Raff	Raff	Deleo	DP	3	131	35x4	SS	1785	1785	1785	2550	2550	2550	2550
AUSTIN H-King	12-21x5 39.6 Deleo		Stmberg	Stmberg	Deleo	D	6	142	34x4	QD	3750	3750	4000	4550	5000	5250	5250
BELL 18	4-31x4 22.5 A. Kent		Stmberg	Stmberg	Dyneto	D	3	114	31x4	QD	1150	1150					
BIDDLE H	4-31x5 22.5 Eiman		Stmberg	Stmberg	G & D	DP	4	121	32x4	QD	2000		12650	4100	4000		
BOUR-DAVIS 185	6-31x5 29.4 West.		Stmberg	Stmberg	West.	DP	3	118	33x4	QD	1785						
6-31x5	22.5 West.		Raff	Raff	West.	DP	3	118	32x4	QD	1680						
BREWSTER C	4-4 15 25.6 Boech		Stmberg	Stmberg	U.S.L.	C	3	125	34x4	SS	7200	7700		8300	8400	8500	8500
BRESCOE B-24	4-31x5 16.3 Conn		Buick	Buick	A-Lite	C	3	104	30x3	C	885	885					
BUICK E-34-35	4-31x4 18.2 Deleo		Marvel	Marvel	Deleo	C	3	106	31x4	C	795	795		1185	1845		
E-44-45	27.3 Deleo		Marvel	Marvel	Deleo	C	3	118	34x4	SS	1265	1265		11065		1265	1265
E-46	6-31x4 27.3 Deleo		Marvel	Marvel	Deleo	DP	3	124	34x4	SS			1495	2175			
CADILLAC 97	8-31x5 31.2 Deleo		Own	Own	Deleo	D	3	125	35x5	SS	3220	3220	3220		4395		
CASE U	6-31x5 29.4 Watha		Raff	Raff	Watha	D	3	125	35x4	SS	1875	1875	1875	**2375			
CHALMERS 6-30	6-31x4 25.3 Remy		Stmberg	Stmberg	Watha	DP	3	117	32x4	SS	1565	1565	1615	1975	2250	2925	2925
CHANDLER	6-31x5 29.4 Boech		Raff	Raff	Watha	DP	3	123	34x4	SS	11795	11875	1795	2395	2495	3095	3095
CHEVROLET 490	4-31x4 21.7 Remy		Zeith	Zeith	A-Lite	C	3	102	30x3	C	715	735		1150	1185		
FA D	4-31x5 21.7 Remy		Zeith	Zeith	A-Lite	C	3	108	33x4	SS	995	995			1475		
COLE 870	8-31x4 39.2 Deleo		Stmberg	Stmberg	Deleo	C	3	127	33x5	SS	2595	12695	2595	3795	3595		
COLUMBIA C&D	6-31x4 25.3 A. Kent		Stmberg	Stmberg	W-Land	DP	3	115	32x4		11495	1450		2395			
COMET C-50	6-31x5 29.4 Deleo		Miller	Miller	Dyneto	D	3	125	33x4				1885				
COMMONWEALTH 4-40	19.6 A. Kent		Carter	Carter	Dyneto	DD	3	115	32x3	SS	1905	1095					
CROW-ELKHART CE-36	4-31x5 19.6 Conn		Zeith	Zeith	Dyneto	D	3	114	32x4	SS	1095	1165	1095	1435			
CUNNINGHAM B	6-31x5 45.0 Deleo		Stmberg	Stmberg	West	D	3	122	35x5			14600/5100		6400			
DANIELS B	6-31x5 33.8 Watha		Zeith	Zeith	Watha	D	3	127	34x4	QDR	2500	3500	3500				
DAVIS H. I.	6-31x4 25.3 Deleo		Stmberg	Stmberg	Deleo	C	3	119	34x4		1685	1685		2200			
J. I.	6-31x5 29.4 Deleo		Stmberg	Stmberg	Deleo	C	3	125	34x4		2050	2050					
DIXIE FLYER L895	4-31x5 16.9 Conn		Carter	Carter	Dyneto	D	3	112	32x3	SS	1095	1095		1375			



DOBLE-DEFRUIT									
2-4 14	Double	Stumb	Wagner	135	35x5	...	...	3750	...
DODGE BROTHERS									
4-31x41	24.0 Own	Stewart	N.E.	D	3 114	32x31 SS	...	985	1425
DORRIS									
6-4 25	38.4 Boech	Stumb	Welsh	DD	3 132	32x5 SS	...	...	...
DOIT									
4-31x5	19.6 Conn	Carier	Welsh	C	3 105	20x21 QD	...	925	1225
DOUGLAS									
8-31x5	33.8 Welsh	Zenith	Welsh	D	3 122	34x4 SS	...	2000	...
ELCAR									
4-31x5	19.6 A.Kent	L-O	Dyneto	DP	3 116	32x4 SS	...	1175	1175
ELGIN									
6-31x41	25.3 A.Kent	Stumb	Dyneto	P	3 116	32x4	...	1295	1295
EMPIRE									
6-3 241	21.6 Remy	Stumb	Wagner	DP	3 117	32x4	...	1165	1165
EMPIRE									
4-31x5	24.0 Conn	Stumb	A-Lite	DP	3 115	32x4 SS	...	1165	1125
ESSEX									
4-31x5	18.2 Delco	Ovn	Delco	D	3 108	32x4	...	1360	1360
FIAT									
4-31x5	14.1 Boech	Zenith	Welsh	D	4 140	32x5 QD	...	5820	6820
FORD									
4-31x4	22.5 Own	Holly	...	D	2 100	30x21r C	...	435	665
FRANKLIN									
6-31x4	25.3 A.Kent	Ovn	Dyneto	D	3 115	32x4 SS	...	2400	2450
GLIDE									
6-31x5	23.4 Welsh	Raid	Welsh	D	3 119	34x4 SS	...	11855	1655
GRANT									
6-3 241	21.6 Remy	Stumb	Wagner	C	3 114	32x31	...	1245	1245
HALLADAY									
6-31x5	23.4 A-Lite	Zenith	Welsh	D	3 120	34x4 SS	...	11375	1375
HARROUN									
4-31x5	16.9 A.Kent	Stumb	Remy	C	3 106	20x31	...	1530	1530
HARVARD									
4-3 241	14.4 A.Kent	Zenith	Wagner	..	3 100	28x3	...	995	995
HAYNES									
6-31x5	29.4 Remy	Raid	L-N	DP	3 127	35x41 SS	...	750	1985
HOLLIER									
6-31x41	25.3 Remy	Stumb	Splitdr	C	3 116	32x4 SS	...	11850	1900
HUDSON									
8-3 241	28.8 A.Kent	Stewart	Splitdr	C	3 116	34x4 SS	...	11385	1385
HUPMOBILE									
6-31x5	29.4 Delco	Ovn	Delco	D	3 123	34x4 SS	...	11385	1385
INTER-STATE									
4-31x5	16.9 A.Kent	Stumb	Bijur	DD	3 112	32x4	...	12050	1950
JACKSON									
4-31x5	19.6 Remy	Schebler	Remy	C	3 110	33x4 SS	...	1350	1350
JONES									
8-3 241	28.8 A-Lite	Zenith	A-Lite	DP	3 118	34x4 SS	...	950	1000
JORDAN									
6-31x5	29.4 Remy	Raid	Welsh	DP	3 1..	34x4 SS	...	11495	1495
KING									
6-31x5	29.4 Delco	Stumb	Bijur	DD	3 127	33x41 SS	...	11875	1875
KINSEL									
8-3 25	28.8 A.Kent	B & Ball	Bijur	DP	3 120	34x4 SS	...	12475	2375
KLINE									
6-31x5	25.3 Remy	Stumb	Ovn	C	3 117	34x4 SS	...	12350	2150
LEXINGTON									
6-31x41	25.3 Welsh	Raid	Welsh	DP	3 120	34x4 SS	...	11495	1495
LIBERTY									
6-31x41	25.3 Conn	Raid	Welsh	DD	3 116	32x4 QD	...	1585	1585
LOCOMOBILE									
6-31x41	25.3 Conn	Raid	Welsh	P	3 122	34x4 QD	...	1595	1595
LOZIER									
6-41x5	43.3 Berling	B & Ball	Welsh	DD	4 139	37x5 QD	...	1595	1595
LUVERNE									
4-41x5	28.9 Boech	Stewart	G & D	D	4 120	36x41 SS	...	1485	1485
MADISON									
6-31x5	33.7 Boech	Schebler	Boech	DD	3 132	35x41 SS	...	15700	5500
MADISON									
6-31x5	23.4 Remy	Raid	Remy	DD	3 120	34x4 SS	...	16700	6000

\*6-passenger. 14-passenger. 12-passenger. 4-towncar.  
 \*\*Convertible.

ABBREVIATIONS—"A. Kent" Atwater Kent, "A-Lite" Auto-Lite, "B. & Ball" Ball & Ball, "Conn" Connecticut, "G & D" Gray & Davis, "Eismann" Eismann, "L-N" Leese-Neville, "N. E." North East, "N. W." Newcomb, "O.M." Owen Magnetic, "Raid" Rayfield, "Stumb" Stromberg, "Splitdr" Splitdr, "Tillotson" Tillotson, "W. Lard" Ward Leonard, "D" Dry Diak, "p." Plate, "11p" Dry Plate, "C" Cone, "F" Friction, "G" Gearless, "CU" Control Unit, "Mag" Magnetic, "SS" Straight Side, "QD" Quick Detachable, "C" Clincher, "DC" Detachable Clincher, "QDR" Quick Detachable Reversible, "U" Universal, "R & M" Robbins & Myers. NOTE—37½x5½ r means that the rear tires are 37½x5½ and the front are smaller. Detachable top, 300x, means \$300 extra.

## Rug Man Drops Retail Price List

NEW YORK, Aug. 12—In the light of the discussion pertaining to the retail price of merchandise the American Fair Trade League is sending to business men a statement that was issued by a rug maker relating to the discontinuance of his retail price list.

The rug man, M. J. Whittall, of Worcester, Mass., states that a better situation may come in the price list field some day and urges business men to work for the right of price maintenance. The league states that the Whittall statement has been "commended in official circles at Washington," which is taken to infer that there is a considerable official element in favor of the use of retail price lists. The Whittall statement follows:

"For some years past it has been our policy to issue a Retail Rug Price List, as a suggestion to our customers of what we felt to be a fair average Retail Price on our goods.

"This price was arrived at after careful investigation and consultation with our customers, taking into consideration the interest of producer, distributor and consumer alike. The response has been enthusiastic and co-operation practically unanimous.

"It is therefore with regret that we feel for the time being we must discontinue this service. Court decision and the more recent ruling of the Federal Trade Commission leaves us in doubt as to the extent we may go, and, rather than have our motive or our policy in the least questioned, we deem it best to leave the matter entirely in the hands of the individual merchant until such time as relief is afforded by Congressional action.

"We are pleased to note that the Federal Trade Commission, recognizing the great evil of price cutting on widely known merchandise, is lending its powerful influence to procure such legislation, so if at that time our good friends in the trade will add their influence by communicating their wishes and explaining their attitude to their Senators and Congressmen, there is every chance that we may again enjoy the advantage of a uniform and standard Retail Price."

## Tire Dealers Organize

KANSAS CITY, Aug. 10—The Kansas City Tire Dealers' Association of Greater Kansas City was organized Aug. 7. The officers elected were: F. C. D. Dobson, Bittel-Leftwich Tire Service Co., president; M. L. Bayha Tire & Rubber Co., vice-president; John W. Beery, Beery-Porter Tire Co., secretary; Glenn R. Donaldson, 336 Tire Service Co., treasurer.

The board of directors consist of the officers and J. W. Barnhisel, General Tire & Rubber Co.; C. F. Kent, Pennsylvania Rubber Co., and G. O. Simpson, B. F. Goodrich Rubber Co.

The purpose of the organization is to promote a greater spirit of harmony and co-operation among the dealers and to co-operate with the Government in regard to the closing of the shops.

A meeting of the board of directors

will be held at the Hotel Huehlebach Thursday. Regular meetings will be held on the second and fourth Thursday of each month.

Tire dealers and service stations were among the first to co-operate in the conservation program more than a month ago. Hours of these institutions are now 7 a.m. to 6 p.m.; close Sundays and holidays. The organization is being maintained for the primary purpose of co-operating in any other projects which the War Industries Board or the Government may suggest.

The Quick Tire Service Co. in its display advertising announcing the abrogation of its former slogan of "Open All the Time" gives a very optimistic and even joyous expression to its purpose of co-operation, as indicated in the accompanying phrases.

## McDonald & Linforth to Distribute Hexall Wrenches

PHILADELPHIA, Aug. 8—The Sedgley Wrench Co. has completed arrangements with the McDonald & Linforth Co., San Francisco, to handle the distribution of Hexall wrenches on the Pacific Coast. Mid-Western sales are handled by the Gray-Heath Co., Chicago.

## New Truck Cab for Columbia Truck

PONTIAC, Aug. 8—A new truck cab will be manufactured by the Columbia Motor Truck and Trailer Co. which will be listed at \$150 extra. One of the features is that windows may be lowered which eliminates the necessity for storing them. The window and the door drop out of sight, are securely fastened and do not rattle. If desired, the entire door can be taken off. This makes a good substantial cab for either winter or summer driving.

## Sell 4,000 Trucks in Bay State

BOSTON, Aug. 10—According to the figures given out by the Massachusetts Highway Commission the motor industry in Massachusetts has not been stagnant this year, for in the first seven months of this year there were registered 1798 more vehicles than during the entire year of 1917. And there have been other increases along the line.

Trucks have jumped from 26,008 for all last year to 30,298, or a gain of 4290 commercial vehicles. And there are 174 more motorcycles listed, while the dealers show a gain of 49. And the state has received within \$1,400 to date of the sum turned in by motorists a year ago. As last year, the total was \$1,969,813, exclusive of fines, it is very easily seen that the figure for 1918 will quickly top the \$2,000,000 mark. Licenses and renewals to drive are falling off due to drafting men. Here are the comparative figures:

	Entire Year To Aug. 1,		
	1918.	1918.	Increase
Cars and trucks .....	174,274	176,063	1,789
Motorcycles ..	11,065	11,239	174
Makers, dealers .....	2,379	2,446	49
Licenses ....	69,487	47,891	*21,596
Renewals ...	144,742	115,445	*29,297
Examinations	17,336	11,298	*6,038
Fees .....	\$1,969,813	\$1,968,438.04	*\$1,347.96

## James Newell Enters Army

ST. LOUIS, MO., Aug. 9—James Newell, president of the Newell Motor Car Co., distributor of Paige and Stearns, and a son of James P. Newell, public administrator, has enlisted in the army as a private and will leave for training Aug. 15. Leslie E. Newell will manage the business while his brother is in the army.

## Coming Events

*Columbia County, N. Y.	Tractor demonstrations, New York.	Aug. 16
	State Food Commission; Calvin J. Huson, Director.	
Claverack, Columbia Co., N. Y.	Tractor demonstrations.	Aug. 16
	(Near Fair grounds) State Food Commission. Calvin J. Huson, Director.	
North Rose, Wayne Co., N. Y.	Tractor demonstration.	Aug. 20
	State Food Commission. Calvin J. Huson, Director.	
Gates Center, Monroe Co., N. Y.	Tractor demonstration, State Fair.	Aug. 28
	Food Commission. Calvin J. Huson, Director.	
West Raleigh, N. C.	Tractor demonstration.	Aug. 28-30
	Farmers' Convention, College Farm. Dr. R. Y. Winters in charge.	
Indianapolis, Ind.	Automotive Show, Indiana State Fair, Indianapolis Automobile Trade Association; John Orman, Manager.	Sept. 2-7
Medina, Orleans Co., N. Y.	Tractor demonstration, State Fair.	Sept. 5
	Food Commission. Calvin J. Huson, Director.	
Madison, Wis.	Tractor demonstration.	Sept. 9-15
	State Fair. O. E. Remy, State Fair Secretary.	
Chicago, Ill.	Automotive and Accessories.	Sept. 14-21
	War Exposition, Municipal Pier. H. V. Buelow, Managing Director.	
Canada	Tractor demonstrations	Sept. 17-18-19
Dallas, Tex.	Seventh Annual Automobile Show.	Oct. 14-17
	Texas State Fair.	
Dallas, Tex.	Seventh Annual Texas Automobile Show.	Oct. 14-27
	Texas State Fair.	
Chicago, Ill.	Convention and Automotive Equipment Exhibit.	Oct. 28-Nov. 2
	National Association of Automobile Accessory Jobbers.	

\*Date and place not definitely fixed.



# MOTOR WORLD

for  
DEALERS, JOBBERS AND GARAGEMEN

Volume LVI  
No. 8

PUBLISHED WEEKLY  
NEW YORK, AUGUST 21, 1918

Ten cents a copy  
Two dollars a year



All-Ready Cementless Patches. Ideal for quick road repair. Just moisten with gasoline and apply to tube.



Miller's Wizard Fix-All makes permanent repair of tubes, casings and all kinds of rubber goods. Handy, swift and clean.



Miller's Lacehold Boots ideal for emergency repair of blow-outs, cuts, etc. Built of many plies of tire fabric.



Miller Bellners are shaped to fit interior of casing snugly. Many plies of strong fabric cured together like casing.

Miller Handy Andy Tube Repair Kit will mend anything from a puncture to a slit in an inner tube. Cement, emery cloth, and full cured live rubber strip.



Pluggum — tough, plastic rubber compound, self-curing, for tire surface cuts and abrasions in outer casings.



## Miller Uniform Accessories and Repair Materials

Every Price Advance in Tires Will Mean Increased Accessory Business to the Dealer.

New tires are not being bought on such a large scale as in the past. Motorists are practising economy—getting the last possible mile out of their tires.

If you can supply your customers with money saving and mileage increasing accessories it will help build up your business generally. Miller Uniform accessories are made by master hands. And the quality that goes into them assures you a permanent and satisfied customer. All Miller accessories do their work thoroughly and well. Be the job large or small, there is one for every need.

Why not take advantage of present conditions? With the constant rise in tire prices the possibilities of building up a good accessory business were never better. Write us today for further particulars on the Miller line of Uniform Products.

### THE MILLER RUBBER COMPANY

Dept. A35

AKRON, OHIO

Makers of Miller Uniform Tires, Red and Gray Inner Tubes and Miller Surgeons Grade Rubber Goods for homes as well as hospitals



Flannel-Back Blow-Out Patch. Self-curing. Four sizes to fit all casings. Flannel-Back protects tube from chafing.



Miller Rim Clinch Blow-Out Patch shaped to fit snugly. Fabric wings fit under bead. Made in sizes from 3 inches to 5 inches.



Miller Hook-Hold Boot for covering blow-outs and cuts. Hooks to flange of rim on clincher type and under tire bead on straight side type. Fits firmly.





## UTILITY *Protected Foot Rail* HEATER

### WHY NOT PREPARE FOR WINTER TRADE NOW?

Cold weather will soon be here, with a greatly increased demand for Utility Heaters. Our live dealers are ordering now, as there is already a well-established demand for Utility Heaters. It is to the advantage of every dealer and jobber to see that he can supply the trade. Better not wait—send in your initial order now.

The Utility Heater is the accepted standard of motor car heating. Its principle is sound, logical and convincing. It insures perfect driving comfort, even in the coldest weather, by tempering the atmosphere of the car to any desired degree. It keeps you warm all over, as though you were in a carefully heated house.

UTILITY Protected Heater—installed in place of the foot rail—is the heater universally recommended by thousands of motorists during the past season—the heater jobbers catalog and the heater manufacturers you will know install as standard equipment.

Ease of installation, attractive appearance, freedom from dust, odor or trouble make it the highly desirable heater.

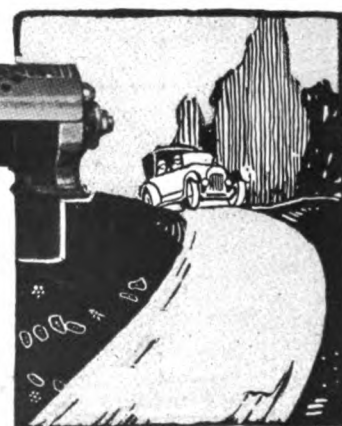
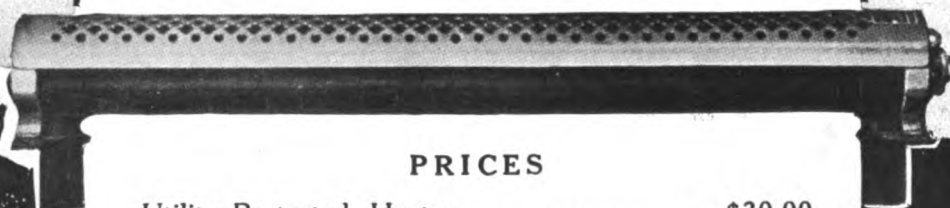
*DEALERS—Ask your jobber or write to us for details*

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Utility Jr. Heater for Fords.....	9.00
Utility DeLuxe Heater for six and eight cylinder cars.....	25.00



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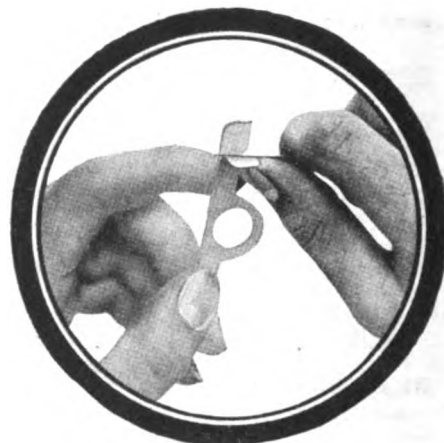
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# MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

Vol. LVI

New York, U. S. A., Wednesday, August 21, 1918

No. 8

## Probability Is Dealers Will Get 25% of Cars

*Hearing Before War Board Results in Impression  
That Industry Will NOT Be Cut 100%*

**DEALERS SHOW CO-OPERATIVE SPIRIT AND GET FINE  
RECEPTION BEFORE WAR INDUSTRIES BOARD**

*N. A. C. C. Has Bungled Situation and Has Bad Standing at Washington—  
Has Not Co-operated With the Government*

By RAY W. SHERMAN

THE dealers had a hearing last Friday before the War Industries Board, and after it was all over came away with the impression that the industry is not going to be shut off entirely.

They believe the factories will be permitted to build about 25 per cent of the cars made last year, and there are many reasons why they are justified in holding this belief.

The foregoing sentences answer the question that is on every dealer's tongue.

Furthermore, there are indications that 25 to 33 per cent of the cars made last year will supply this year's demand—which means that a cut to these figures will not be a great hardship.

*But out of all the results of the trip none is greater than the discovery that the automotive industry's affairs as handled at Washington have been pretty much a piece of bungling to date.*

Had the National Automobile Chamber of Commerce's tactics and operations at Washington been different during the past year the industry might not have suffered as it has from rumors and cross-rumors and prospective adversities.

Not until the dealers went to Washington, both before the Ways and Means Committee and the War Industries Board, did official Washington meet men who were willing to co-operate and

work for mutual results. Under N. A. C. C. tactics there has been a long course of bargaining and lack of co-operation, which has antagonized officialdom, caused drastic action and threatened drastic action and left in the mouths of the men who are managing the war a bad taste.

All of this has done incalculable harm to the industry—and much of the blame can be laid at the industry's door.

Who is at fault within the N. A. C. C. is something for the N. A. C. C. to determine. It should be left to clean its own house. And that it should clean house—at least so far as attitude and methods are concerned—can hardly be disputed when the facts are considered.

### Has No Standing at Washington

The events of recent weeks seem to indicate that the N. A. C. C. is licked. *It has no standing at Washington.* Furthermore, the recently published letter of the War Industries Board, referring to a curtailment of 100 per cent, *was little more than a slap in the face of the N. A. C. C., which the War Board considered merited punishment.*

The trouble goes back to the beginning of the industry's entry into Washington affairs. When the war broke out on this side of the water and big events seemed at hand the industry did not send its biggest men to Washington. The world-known big men from the factories, great managers and executives, should have gone to the capital to show their interest in matters and to be in immediate touch with the rapidly shifting events. *But not until months had passed did these men get into the work.*

One of the first steps in curtailment was the famous "thirty per cent." The manufacturers agreed with the War Industries Board that they would curtail 30 per cent in order to save steel. The War Board accepted this compromise only to learn later that the industry was already curtailed about 30 per cent and that the concession amounted to practically nothing. *Wherefore the War Board considered that the N. A. C. C. has "slipped over a fast one."*

Under this compromise there was a bargain to the effect that the industry was to get 70 per cent of its steel. Recently the N. A. C. C. held a meeting in Detroit and voted to compromise further cuts on a basis of 50 per cent, telling the War Board that it must have 50 per cent of its steel. It furthermore demanded the previously promised 70 per cent, which it said had not been delivered.

### Unpatriotic Attitude?

AND ALL THIS WAS AT A TIME WHEN THE WAR INDUSTRIES BOARD, IN THE FACE OF GERMANY'S ADVANCE, WAS TRYING TO GIVE WAR INDUSTRIES 20,000,000 TONS OF STEEL IN A 6-MONTH PERIOD WHEN WE WERE PRODUCING ONLY 16,500,000 TONS IN THE SAME PERIOD.

Is it any wonder that people who read in the papers that "Hugh Chalmers DEMANDED" 60 per cent of normal steel requirements classed the industry as unpatriotic?

After a session, July 16, between the N. A. C. C.

and the War Board the Board told the N. A. C. C. to make inventories of the steel on hand and report promptly, after which matters would be decided regarding steel. *These inventories have not yet been given to the War Industries Board.*

THIS HAS CAUSED FURTHER BAD STANDING FOR THE INDUSTRY AT WASHINGTON.

### Failed to Co-operate

It is further stated that the industry promised the War Board in writing that it would co-operate with the War Industries Board and would consult with it before making purchases. It is charged by the War Industries Board that *this co-operation has been withheld, that no one has worked with the War Industries Board, and that all the approaches from the N. A. C. C. have related to bargaining and not to co-operation.*

As regards taxation: When the first tax on cars was proposed the N. A. C. C. went before the Ways and Means Committee of the House of Representatives and opposed taxation. It said that a tax on cars could not be passed on to the consumer, that it would seriously injure many factories and that the effect would be disastrous.

Yet a 3 per cent tax was imposed, because the Ways and Means Committee was compelled to raise revenue from every possible source and even the majority of people connected with the industry feel that as big an industry as this can well help the war by paying taxes.

A few weeks ago the N. A. C. C. again went before the Ways and Means Committee to oppose taxation. It said it was opposed to taxation. It did not suggest that any taxes be levied on motor cars. *And the Committee threw in the face of the N. A. C. C. its statement of a year ago that the tax could not be passed on and would be ruinous, for the N. A. C. C. was compelled to admit that this had not proved true.*

### What Might Have Happened

These are the prominent points in how the manufacturers have put themselves in wrong—very wrong—at Washington, and account for the lack of standing the N. A. C. C. has there and for the adverse attitude of the War Industries Board.

And now comes the story of how the spirit of co-operation might have effected different results. When the recent tax was proposed the National Automobile Dealers' Association asked for a hearing before the Ways and Means Committee. President F. W. A. Vesper, Executive Secretary E. E. Peake and others went before the Committee.

They told the Committee—which is hard-pressed for ways of raising revenue—that *the dealers do not oppose taxation.* Furthermore, the dealers told the Committee how a revenue much larger than was raised by the first tax might be secured from the motor car business with a minimum of trade disturbance.

The dealers recommended a tax on America's 5,000,000 motor cars and admitted—which is the truth—that the dealers could stand an increase in the 3 per cent tax. Yet great criticism was heaped upon the heads of the dealers for admitting facts. *Had*



*the N. A. C. C. admitted a few more facts it might be better off to-day.*

The result was that the Ways and Means Committee prepared a bill which placed a tax upon the 5,000,000 cars in this country, based upon the original list price, which any motor car man knows is the wrong way of putting it.

#### **Tax Changed to Horsepower Basis**

Wherefore, Vesper wrote to Chairman Claude Kitchin of the Ways and Means Committee and said this was the wrong way and that the tax should be based on horsepower. Kitchin replied courteously and at once changed the tax to the horsepower basis, as was widely reported in the newspapers.

Of course, the car sales tax still stands in the new bill at 10 per cent, and the dealers consider this high, but if it is lowered it will be due to the dealers when they again appear before the committee in their accustomed spirit of co-operation and not through any effort to fight the tax.

The next step in the co-operative work of the dealers came after the War Board published its "spanking" letter to the N. A. C. C., advising manufacturers to get on a 100 per cent war basis by Jan. 1. The dealers' association asked for a hearing before the War Board and it was at once granted.

Wherefore, they met in Washington last Thursday for a preliminary session before going before the Board. They drafted a brief, presenting arguments as to why the manufacture of cars should be continued in some degree. And they read the brief before the War Board, and had a session of two hours and a half, during which questions were asked and answered by both sides, the war needs of the Government were explained, and *the dealers came away absolutely sold on the good intentions of the War Board and firmly resolved to sacrifice their businesses absolutely if the War Board said the safety of the country required that sacrifice.*

During the hearing the War Board asked the dealers if they could get by with 25 per cent of the cars made last year. Instead of shouting holy horror at the idea the dealers truthfully replied that they believed they could—and they can.

#### **Dealers Win Approval of War Board**

And later there were other side-lights which indicate that the industry will not be cut below 25 per cent of last year's production, which is needed for two reasons: 1—To keep the factories, but more especially the dealers, from being wiped off the map, and 2—To replace the cars that have made themselves highly essential through use and which are wearing out this year.

Through their spirit of willingness to co-operate and do anything to help, the dealers won the approval of the War Board, and the result was a statement to the public press of the country that is *the first thing of its kind that has come out of Washington. It was done at the specific request of the dealers, it declared that no industry is a non-essential, it gave the motor car industry the standing of legitimacy it has sought and helped clarify the much muddled public mind regarding the automotive industry.*

After the statement appeared, a Washington man, who has been familiar with the results of hearings of the N. A. C. C. before the War Board, said: "What did you dealers do up there? Hypnotize those fellows?"

What the dealers found was that all the time spent in shooting economic arguments at the War Board is pretty much wasted time. The War Board knows all about the dealers, it knows all about how farmers use cars, some of the members of the Board know more about farmers and automotive economics than some of the people in the industry. The War Board has the big job of winning the war and not sacrificing industries unless necessary, *and it is doing the job to the best of its ability.*

#### **What Industry Needs**

The dealers found that the War Board is just a bunch of human beings, working like blazes. And, being human beings, *the members of the Board appreciate a spirit of helpfulness and co-operation and are willing to repay in kind.*

It is even charged by some people within the industry that members of the industry *are not playing fair with one another*, which is, of course, unsubstantiated rumor. It is charged that the withholding of inventories and their handling has been wilful in some cases. These things may or may not be true, but they indicate the manner in which the situation has been bungled and the impressions that prevail as a result.

What the industry needs is:

1—A more co-operative spirit toward the War Industries Board.

2—A different form of representation at Washington.

It needs men of the type of those who represented the dealers—like Vesper and Peake, and those who are aiding them in their national problems.

#### **Dealers' Tactics Right**

The dealers have proved that their tactics are the only ones that get results, and it is safe to assume that what is saved of the industry will be due to the efforts of the National Automobile Dealers' Association and the determination of the War Industries Board to be fair even when it is not in turn met with the expected fairness.

As to the dealers getting by on 25 per cent of what was produced last year, leading distributors at the Washington meeting said they believed the demand for cars this year would not exceed 33 per cent. They said the taxes, war needs for money and other factors would normally bring the buying of the country down to about one-third. This would mean that if the dealers get 25 per cent they are only a little below normal demands. *Of course, 30 or 33 per cent would be better than 25 per cent.*

As to any definite percentage being promised by the War Industries Board, that hardly seems possible. War needs must be met, and if there is steel left for non-war industries we shall get our share. The War Board probably can estimate fairly accurately what percentage of 1917 needs this will be, but it can hardly promise a definite percentage. It can only say

it will do the best it can, and hopes to supply a certain percentage.

There are reputed to be quite a few unsold cars in some sections of the country, where dealers find the demand is not up to the stocks on hand. An equalizing of these stocks could easily be effected if any dealer cares to let it be known that he has a surplus.

The War Board recommends that dealers get on a war basis. The wise ones are already doing it. Henley-Kimball, in Boston, is building a paying accessory department.

John Lee, in Syracuse, is ready to centralize in one location, and he also has during the past year built a paying accessory business.

Tom Hay, Chicago, has a truck agency, and is dickering with a tractor company.

Several big dealers have built up other interests, such as farms, that will help them through the crucial period.

Everywhere dealers are reducing overheads, reshaping plans, and getting on a basis that will come nearest to getting them by even if no cars at all are secured. The small dealer should plan on the basis of no cars at all, and then if he gets any he is lucky. The big city dealers will be hardest hit, but all of them—big and little—should think automotive thoughts—trucks, tractors, farm light and the rest.

### The Dealers' Brief

"To the War Industries Board—Mr. Chairman and Gentlemen: The purpose of the telegram sent your Body on Aug. 9, asking a hearing before a final decision was made on the curtailment of the manufacture of passenger cars, was to bring before you the automobile dealers' actual situation, and not in the nature of a protest or complain.

"We realize the seriousness of the situation and the enormous extent of your problem, and want to assure you to begin with of the co-operation of the entire automobile dealer industry in your endeavor to bring about the successful termination of the war.

"There may be some features connected with your problem with which we are not familiar, and we feel certain that there are some facts regarding the automobile dealer's situation that possibly are not known to you, and therefore, in presenting this brief, we are doing so purely for the purpose of giving you the situation exactly as it is, and as stated before, not in an attempt to criticize.

"The press dispatches indicated that in the opinion of your Board, the elimination of the automobile would not necessarily affect the manufacturer because he will be given war work with which to preserve his organization, and that in any loss of actual production he would not greatly suffer, but no thought was indicated regarding the dealer industry

## *If Your Newspapers Didn't Print All of This They Left Out Part of the Story of What the Dealers Did*

The War Industries Board authorizes the following:—

At a meeting of the War Industries Board before which appeared a committee of twenty-five leading automobile dealers from various parts of the United States representing the National Automobile Dealers' Association it was stated:

1—While no order had been issued by this Board cancelling motor car production and no definite order of curtailment could be given until the automobile manufacturers had submitted inventories of present stock, the Board has already suggested to automobile manufacturers that they undertake to get war work even up to 100%, if possible, by January 1, 1919. Automobile manufacturers have already accepted war orders aggregating between \$800,000,000 and \$900,000,000.

2—The War Industries Board realizes the importance of a continuation of all possible industrial activity so far as it can be brought about without interference with the war program.

3—All automobile dealers, however, should put themselves as rapidly as possible on a war basis so as to be ready for whatever curtailment becomes necessary.

4—The War Industries Board has not classed the automobile or any other industry as non-essential, and in determining the standing and position of any and every industry it will be guided solely by the war requirements and needs as distinguished from the wants of the civilian population.

5—In view of the fact that war requirements of steel and rubber apparently exceed the supply, making automobile curtailment necessary, the war service committee of the National Automobile Dealers' Association has agreed to recommend ways and means to stop unnecessary use of passenger cars and increase their utilitarian uses.

which is dependent absolutely upon the sale of automobiles and which, therefore, has no such recourse.

"The automobile industry is unlike any other, in that it requires special equipment in the shape of buildings, etc., to conduct same. Most of these are of peculiar construction due to the necessities of the business, and because of the requirements for fire protection, etc. A great majority of these are occupied under lease or are constructed under contract against which loans have been made, and

other obligations have been incurred for long duration, the payment of which depend upon the returns from the business. Therefore the discontinuance of the sale of automobiles would entirely eliminate the returns and consequently greatly affect the safety of the investment.

"There is we believe, no other business where special equipment for the handling of sales and distribution is so necessary nor is there any other business which, if the product is eliminated, could not take on some other line of merchan-

dise with the same organization and equipment. There is nothing that an automobile dealer can substitute that will return a sum sufficient to make up for his loss or obligation in this direction.

"It has been contended that he can sell used cars, but this is founded on the sale of new cars, and trucks and tractors are not yet in sufficient volume to make up the difference.

"There is no question in the mind of the automobile dealer regarding the necessity of providing steel to win the war, and if it be found absolutely necessary to close up for any part or all of the period of the war, there is no industry that is more willing to do so, but the effect of this would be disastrous, due to the obligations in the way of leases, contracts and building agreements, etc., and the elimination of the ability to meet these, for which a dealer is responsible.

"Therefore, it is felt that protection should be provided by your Board in the event that such elimination may be found necessary, and some relief should be afforded which will prevent absolute failure on the part of the dealer. This applies with equal force to the dealer in the cities with a large investment and the one in the country districts whose investment is necessarily smaller.

"There are approximately 2500 or 3000 dealers located in what might be known as automobile distributing centers who sell cars to residents of the large cities, or in addition thereto have jurisdiction over the distribution of cars in a large territory tributary.

"There are approximately 25,000 dealers located in smaller cities and villages whose business is almost entirely made up of the sale of cars in their surrounding territory, together with repairs and such other kindred lines which go to make up the business. Taking from this dealer the automobile, there does not remain sufficient income for him to maintain his overhead and to take care of his obligations, to say nothing of meeting his living expenses.

"In all cities and towns, most of the automobile business is being conducted in buildings especially built for the purpose, most of which are located favorably for that business but unfavorably for any other line. The elimination of automobiles would leave these buildings valueless on his hands, there being no other line of business to which they could be adopted without very expensive alterations.

"It is safe to say that in the towns that average possibly five automobile establishments not more than one could be maintained upon the actual necessity for repairs of the cars in that community. Therefore, not over 20 per cent of the automobile dealers in the smaller cities can continue without automobiles. In larger cities where more expensive buildings are necessary, the situation is even more grave because the investment is in all cases larger and involves more problems.

"Comparison has been made with the situation in England where the manufacture of automobiles has stopped since war was declared, apparently with no

serious consequences. The situation is not in any sense similar, because the total number of cars in use there was something under 300,000, a good part of which were American-made cars, whereas in this country, we have over five million in use.

"The further fact remains that in England cars were not generally used by all classes of people and therefore were largely pleasure vehicles, while with us over 80 per cent of the cars are utility cars in that they are used mostly for utilitarian purposes during the day and for recreation purposes at other times.

"In England the car did not assume the transportation importance that it does here because of the great difference in the distances and because it was not used by the farmer or rural resident. Here the automobile has become an absolute necessity to the farmer because it has enabled him to carry on his work with less actual labor and has shortened distance which before the advent of the motor car was the one handicap most serious in rural communities.

"As a means of transportation it is equally important in the cities where, under the present living conditions, the automobile has become a necessity. In most cities the transportation problem is serious because it is inadequate to take care of ordinary needs, and the growth of public traffic utilities has not kept pace with the expansion in population.

"The automobile is also responsible for the extension of suburban districts, a great majority of which would be practically impossible without the means cars provide for transportation. This is equally true of the country. Where an ordinary distance up to ten miles was considered the limit of a small town's trading radius, with the advent of the automobile this trading radius has been widened out so that the farmer living twice or three times this distance may utilize the facilities formerly enjoyed only by the one living near the town.

"As an illustration; take for instance, in the state of Indiana; there are 215,485 farms, the occupants of which under the old method spent approximately one day per week to make a trip to town. At

present there are 95,000 cars in use by farmers in that state, who by the use of same make their trips at noon or at night and get back to the farm without loss of time.

"Suppose that these farmers spent only an average of one half day instead of a full day per week, they thus save by the use of the motor car the other half day for productive labor. In Indiana alone these productive hours of increase would be over 2,000,000 days in the year. This would equal the constant employment of 10,000 people for 247 days a year; merely one illustration of the tremendous importance of the automobile in the rural life of our country.

"It might be said if there are five million cars in use in the United States, these are sufficient for all present requirements. This probably would be true if it were not for the fact that over four million of these are more than a year old, and, as the average life of the general utility car is about five years, it would indicate that the ordinary mortality would reduce the number at the ratio of nearly one million a year. By extraordinary methods of repair and rebuilding this might be reduced but not sufficiently to offset the natural decrease.

"Bringing this to your attention is not for the purpose of justifying the continued regular production of passenger cars, but merely because we feel that some arrangement should be arrived at which will enable the factories to produce enough cars to keep up the efficiency of this tremendous transportation force and to enable us to keep our organizations together.

"We are firmly of the opinion that the unnecessary use of an automobile should be reduced as much as possible, and to this end the dealers have voluntarily during the past months taken active steps to encourage the necessary use of the automobile and to discourage the unnecessary use as much as possible.

"We ask, therefore, that thorough investigation be made as to the results of curtailment in all communities and that you weigh carefully the far reaching results against the necessity of such action."

## Here Is the Letter to the War Board from Kansas City's Civic Bodies

"Attention has been brought to us by recent newspaper reports that your Board finds it necessary to ask automobile manufacturers to cease the making of passenger cars on and after Jan. 1.

"Before such action is finally taken by your Board we wish to present Kansas City's case to you and that of Kansas City's trade territory. This city as well as all other large centers has come to depend upon the automobile. Through its use we have been able to speed up every business activity and thereby have been able to do better our share in helping to Win the War.

"To stop the manufacture of passenger

cars would in our opinion mean a calamity to this section of the country. We are one of the centers of the farming industry and out of the twenty-five million dollars worth of automobiles sold yearly by the distributors in Kansas City over 80 per cent goes directly to the farmer, and in these times, when man power is getting scarcer each day, there is no other way that the farmer can speed up his industry except by the use of the motor car.

"Such curtailment would mean that one of Kansas City's best commercial centers, Automobile Row, would be demoralized

(Continued on page 34)

# Local Tractor Demonstration Big Help to Dealers

*Develops Hundreds of Prospects and Shows Farmers  
Just What Machine Will Do—New York State  
Holds One at Claverack*

## THE TRACTORS AT CLAVERACK

Tractor	Rating	Fuel	Plow	Size of Bottom	No. of Bottoms
Emerson-Brantingham .....	12-20	Gasoline	E-B .....	14 in.	3
Waterloo Boy .....	12-25	Kerosene	John Deere .....	14 in.	3
I. H. C. ....	8-16	Kerosene	Oliver .....	14 in.	2
Titan .....	10-20	Kerosene	Oliver .....	14 in.	2
Fordson .....	22	Kerosene	Oliver .....	14 in.	2
Maxim .....	12-24	Gasoline	Oliver .....	14 in.	2
National .....	12-22	Kerosene	Oliver .....	14 in.	2
Cleveland .....	12-20	Gasoline	Oliver .....	14 in.	2
Case .....	9-18	Kerosene	Grand Detour .....	14 in.	2
Moline .....	9-18	Gasoline	Moline .....	14 in.	2

By J. Howard Pile

CLAVERACK, N. Y., Aug. 16—Automobile dealers and garagemen from all parts of Columbia and adjacent counties took an active interest in the tractor demonstration held here to-day on an 18-acre field about 3 miles from Hudson. Ten tractors displayed their ability to plow and disk before nearly 5000 farmers from the surrounding country.

A plowing demonstration was given at 10.30 a. m., in which each tractor plowed up about  $\frac{1}{2}$  acre, and at 2.30 p. m. the main demonstration took place, each machine being allotted approximately 1 acre which had to be plowed and then disked.

### No Feature of Competition

There was no feature of competition in the demonstration and each tractor operated at the speed which the operator thought would be most economical and at the same time get through in a reasonable time. The demonstration was staged to prove to the dealers and the farmers what the tractor will do on the field and the number of sales and the large list of interested prospects obtained proved that it was an unqualified success from this standpoint.

The tractors started in to plow on their respective plots of ground at the same instant, and at a certain fixed time each was allotted 15 min. for the demonstrator to explain the merits of his machine to the farmers. These times were so spaced that only two explanations were being made at the same time, and these were at widely different parts of the field. The interest taken in these

talks and the intelligent comment made by the farmers was convincing evidence that the farmer who needs a tractor and has the money to buy one will not be a hard prospect to sell.

Some of the points which interested the farmers most were the ability of the tractors to get up close to trees, back their plows out from under roots and make the turns at the headlands. Another feature that took the popular fancy was the girl driving the National tractor. This did much to dispel the idea that a trained engineer is necessary to operate a tractor.

Outside of a couple of broken hitch pins when getting under the roots of trees the demonstration was not marred by a single mishap or breakdown. In the morning a plowman was permitted to accompany the tractor any or all of the time, but few of the exhibitors availed themselves of the privilege excepting when starting or when going around trees. In the afternoon the plowman was permitted to follow the tractor once around, and after that was not allowed to come near it excepting when cutting close around trees. Some of the operators even skinned around the trees without help. The crowd watched these operations very critically. The furrows were carefully examined and compared, and altogether it could be seen that these farmers were convinced of the usefulness and necessity of the tractor on their farms. Many already own tractors and came to see whether any of the tractors on the field were doing better work than the ones they owned.

This demonstration was one of a series being conducted by the New York State Food Commission in the various counties of the state, the local farm bureaus co-operating in each case. Three have been held so far in Fulton, Utica and Watertown, and six more are scheduled at North Rose, Herkimer, Rochester, Medina, Syracuse and Riverhead.

### Farmers Familiar With Gas Power

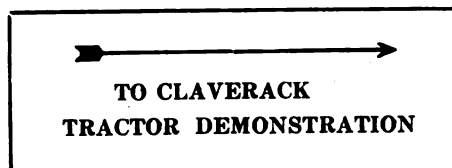
The farmers that came to watch the demonstration were, as a rule, familiar with the gasoline and kerosene engine. This was proved by the nature of the questions that they asked and from the fact that nearly 800 automobiles brought farmers and their families against 11 horse rigs. This was the most convincing proof that the farmer appreciated power instead of horses ever seen in a farming community in New York State.

Exhibits of grinders, shellers, pumps, sprayers, straw spreaders, ensilage cutters, etc., attracted interest along one side of the field. Many of these were run under power, but the tractor people seemed to have lost a bet when they allowed these fellows to use stationary engines instead of hitching the tractors to them to show the versatility of the tractor.

The Columbia County Farm Bureau is entitled to much credit in getting the automobile dealers in the county interested in the demonstration. Several weeks previous to the demonstration each garage and salesroom was placarded with a poster and the owner or manager was talked to personally and his interest



aroused. The day before the demonstration the roads through the county were marked with cardboard signs like those shown herewith tacked on telegraph poles at intervals. The result of this preliminary work was that everybody knew there was going to be a demonstration, they knew when it was to be and they either knew where it was to be held or else that they would have no difficulty



in finding the way with the aid of the road signs.

Two of the tractors that participated in the demonstration were represented in Hudson by automobile dealers, and these dealers co-operated with the demonstrators in various ways. Other dealers in Hudson and other towns were so far interested that there is no doubt that a number of agencies will be closed very shortly.

#### Good and Bad Points

There are several lessons to be learned and facts to be stated about the demonstration that are important to automobile dealers. The splendid co-operation of all the different interests, Food Commission, Farm Bureau, Demonstrators, Distributors and Dealers is to be highly commended and is worthy of being followed by similar organizations in other states.

Such a demonstration, fostered as it was, by the farmers' own organization, brought the tillers of the soil out in great numbers, and they came in a mood that was not one of suspicion but one of enthusiasm. This makes selling tractors easy for the demonstrator and for the dealer who may afterwards take the agency for one of the makes.

One of the bad features which developed during the course of the demonstration was the knocking. A majority of the "spielers" who talked to the crowds on the merits of the tractor in question did not confine themselves to lauding their own machines, but spent most of the 15 minutes allotted to them in telling the disadvantages of the other tractors on the field. The following are samples:

"We have a 2-cylinder engine and this engine only has half the parts to get out of order that a 4-cylinder engine has. We have only two pistons, two connecting rods, etc., etc." Not a word about the merits of the engine, but simply knocking the 4-cylinder engine and hinting that the 4-cylinder engine having so many parts will quickly get out of order. Here is another:

"We do not use kerosene—we use gasoline. Kerosene positively will not work. If kerosene would work would automobiles be using gasoline to-day? Kerosene soots up the cylinders, fouls the spark plugs and it cannot be vaporized properly and the engines are hard to start."

This man did not make a single state-

ment containing either explanation or praise of his gasoline engine, but devoted his time entirely to decrying the kerosene engine. His statements were belied by the performance of the six kerosene-burning tractors on the field which operated perfectly and did their work in a business-like manner with no hint of trouble.

There were still others who knocked other forms of ignition than that used on their own tractors without giving any very convincing arguments as to the excellence of their own, and again there were those who knocked wheel arrangements and sizes other than the ones used on their own tractors.

This is bad work! The passenger car and truck dealer has been all through this and he knows that this kind of sales argument is the worst boomerang imaginable. The combined efforts of these knockers instilled into the minds of the farmers that came to watch the demonstration a suspicion that the tractors would not do the work IN SPITE OF THE FACT THAT THEY SAW THEM DO IT WITH THEIR OWN EYES. There is not the least doubt in the world that a number of sales were killed by these rank amateurish sales methods.

On the other hand, there were two concerns who did not stoop to these childish methods. They made a clean, straightforward statement of the good points of their tractors, stated simply what kind and how much work they would do and mentioned the reliability of the maker. One of them ended up his talk with these words, "*Gentlemen, we believe that we have a good tractor here. We think it is the best one here. But we are more than willing that you should watch all the others and then watch ours. We believe that any of you gentlemen will get good value for your money if buy any tractor on this field to-day.*"

#### The Womens' Land Army

A number of speeches were made from the stand during the lunch hour, and among these was a woman who spoke of the merits of the Womens' Land Army. This army is made up of women and girls, and they work in "communities." They are skilled in all forms of farm work from driving a tractor to pitching hay. Where farm help is needed in a district, a group of ten or more of the women camp in a tent, cook their own meals and do not depend on the farmer for either food or lodging. The price charged to the farmer is 25 cents per hour, 10 hours per day. The farmers were much interested in this as they were in the girl driver of the National tractor, because the shortage of help is one of the things that is holding back farm work, and the tractor and the women can be of great assistance.

These tractor demonstrations are the greatest chance the automobile dealer ever had to make good, and it will be his own fault if he does not take advantage of the tremendous opportunity offered him. This is the time to get in on the ground floor.

There are a number of tractor demonstrations in different parts of the coun-

try, some of which have been held and others which are scheduled for later dates.

There was one national demonstration which was held recently at Salina, Kan., and this was held directly by the manufacturers of the tractors.

There are a number of state demonstrations such as this one at Claverack, and it is possible for distributors, dealers or manufacturers to make arrangements to participate in these.

State fairs this year will have tractor demonstrations in many cases, and it will be possible for dealers, distributors or manufacturers to be represented.

Then again there are demonstrations arranged by one dealer or distributor to demonstrate the tractor to farmers in a certain territory.

Of these the ones fostered by the states or by farm associations are the best from the dealer's point of view, as he has no responsibility in getting the people to come, and not only that, but the right kind of people do attend these. They are farmers with a capital F.

#### Demonstration at Decatur

DECATUR, ILL., Aug. 19—Tractor dealers of Decatur gave a successful demonstration of the various makes of machines handled in this territory at the Brett farm, north of the city. A crowd of 2500 attended, the attendance surpassing expectations. The demonstration was not designed as a competition, but to give the farmers an accurate idea of the merits of each, working under the same conditions. Where any farmer requested a special performance of any machine it was granted and he was able to follow closely the work performed.

Prof. F. M. White, engineering editor of the Orange Judd Farmer, was present and gave a talk upon the tractor, expressing his belief that it was an essential part of the equipment of every farm. He argued that tractors were labor savers, and pointed out the many varieties of work for which they are capable. Prof. White is an enthusiast regarding the tractor, and his talk was a valuable aid to the tractor salesman.

One of the new Fordson tractors was included in the number that gave demonstrations and pulled two plows. The county farm advisers from Macon, DeWitt and Moultrie counties were included among those witnessing the demonstration.

#### To Teach Tractor Operation

COLUMBUS, Aug. 19—C. M. Roubush, educational director of the Columbus Y. M. C. A., will open a school to educate men and women in the driving and care of tractors beginning Sept. 1. Courses will be offered which will give students a thorough knowledge of the mechanism of tractors and will enable them to determine if certain farms are suitable for tractor use. R. A. Martin, an engineer for many years, will be at the head of the teaching force. The course will cover a period of seven weeks. A night course of 12 weeks will also be started about the same time.

# Any Group of Dealers Can Put On a Tractor



*When a demonstration was held at Claverack, N. Y., last week there were only ten tractors, yet they drew the crowd picture at the far right those who came in horse-drawn vehicles. It is a wonderful demonstration of the passing The story is on the*



*The Emerson-Brantingham with three plows.*



*An International 8-16 plowing.*



*Titan 10-20 showing what it can do.*



*Waterloo Boy drawing a Deere plow*



*Mazim following Waterloo Boy.*



*The farmers came in droves and followed the tractors all over the farm. They talked intelligently, interestedly, and sounded like real prospects.*

# Demonstration in Any Little Country Town



that is shown on these pages. The pictures above show the number of farmers who came in motor cars and the small of the old era and the coming of automotive days. The pictures were taken by J. Howard Pile of MOTOR WORLD. two preceding pages



*Ruth Russell drove a National.*



*Cleveland doing a crawl*



*The Fordson drew a crowd.*



*The Fordson disked.*



*So did the Waterloo Boy*

# Are You Getting Behind the Rural Motor Express?

Dealers Everywhere Are Supporting the Movement—On This Page Is This Week's Statement from the National Motor Truck Committee of the National Chamber of Commerce, Which Is Helping the Work, Under the Direction of Samuel A. Miles and F. W. Fenn at 7 East 42d Street, New York—They Want You to Write to Them and Ask Them How to Start the Work in Your Town

**“W**E are informed by J. H. Hathaway, New England manager of the White Co., as follows: ‘We are sending out blanks with requests for funds and expect to raise \$1,000, to be placed against a like amount by the Committee of Public Safety and \$1,500 by the Chamber of Commerce. Altogether we expect to get a fund of about \$3,500 that we may give this Rural Express a six months’ sendoff.’

“J. R. Dalton has just been appointed chairman for the South Dakota Highways Transport Committee. From his letter he appears to be a good live wire, for he is getting in touch with efforts up there now.

“We are just advised by Coleman Murphy, sales manager of the MacDougall Motor Co., of Pittsburgh, Denby motor truck dealers, that they are putting on several Denby trucks, operating a Rural Motor Express in Allegheny County.

“G. Chester Illig, president Erie Service Co., Buffalo, N. Y., says: ‘We are operating at the present time a fleet of eighteen trucks, some of which are used exclusively in the operation of Rural Motor Express lines between Buffalo, Batavia and Rochester, with large receiving and delivering terminals at Buffalo and Rochester. Our policy is to pick up loads with light trucks, bring them to our terminal and then carry them in large 5-ton units to destination.’

## From Chattanooga, Tenn.

“F. E. Glaser, of the Glaser Motor Hauling Co., of Chattanooga, Tenn., was in town yesterday and told me of his plan. He has endeavored to take up the matter of Rural Motor Express with Mayor Candler, of Atlanta. They are now operating a large line of heavy trucks through from Chattanooga to Atlanta, bringing in foodstuffs of all kinds as well as fruits that have formerly been given to cattle. Their marketing arrangements are completed and they are now disposing of all garden truck to the advantage of everybody.

“A line of Rural Express is about to be formed by R. R. Gilmore, of Grand Rapids, details of which will be given later.

“Out in Knoxville, Marion County, Iowa, George Amos writes: ‘I am about to place in operation two or three G. M. C. trucks, 2-ton capacity, from the county seat, Knoxville, to some inland towns 14 to 20 miles away. There are no railroads through these towns and the cattle, hogs and grain are driven or hauled by wagons, and the loss or shrinkage on cattle and hogs is large.’

“C. E. House, secretary of the Chamber of Commerce, Union, S. C., writes: ‘We have been planning for some time to get several Rural Motor Express lines in operation and hope to begin one within a week.’

“A. T. Cook is running a Rural Motor Express line, and has been for two months, out at Oxford, Ind., and asks for information.

## Denver Getting Started

“A Rural Motor Express line, according to Tom Botterill, chairman of the Colorado Highways Transport Committee, is in operation between Denver and Fort Collins and intermediate points, covering a radius of 70 miles. It is run by the International Transportation Co., G. I. Barger, of Denver, general manager.

“A. F. Lamberger, general manager Motor Car Dealers’ Association of San Francisco, writes: ‘Motor transportation is under the jurisdiction of the State Railroad Commission, who have adopted the policy of granting certificates of public necessity and convenience to individuals, their theory being that the person holding the certificate is entitled to be protected in his investment. They will not permit competition except upon a proper showing of an insufficient equipment or inadequate service.’

“The North Carolina Good Roads Association of the division of the National Highways Association held a meeting at Rightsville Beach, N. C., on the 7th, 8th

and 9th, relative to highway legislation and Rural Motor Express. They asked us for 200 copies of our literature, which we sent them.

“Things have commenced to move in Milwaukee, Wis., as a good live wire seems to have taken hold of things. A. J. March, president of the Milwaukee Automobile Dealers, Inc., has agreed to represent us, and Bart J. Ruddle, secretary of that association, tells us that if anybody can start Rural Motor Express going in Wisconsin March can.

“W. W. Pratt, Jr., secretary of the Indianapolis Chamber of Commerce, tells that they have 500 trucks carrying cattle from the farms to the stock yards daily. He says from midnight to 9 a. m. the line extended for over a quarter of a mile from the loading platforms.”

## Price of Fuel Advances in California

LOS ANGELES, Aug. 17—The price of motor fuels in this district of Southern California advanced ¼-cent per gal. today. Gasoline now retails for 20½ cents; distillate, 11½ cents; kerosene, 9½ cents per gal. The increase in price is ascribed by producers to the 25 per cent advance in freight rates. In other parts of Southern California the raise has been in effect some time, but delay in figuring out the freight differentials to this district had staved it off here until today.

There is general complaint against the quality of gasoline now being supplied. Until recently this city had an exceptionally high test specification for gasoline. In answer to protests from refiners and in the effort to be patriotic the city council permitted a change in specifications. Now there is nothing to prevent the sale of mixed or adulterated gas and as a consequence work in shops and garages has been increased at a time when mechanics are scarce and everybody is seeking to reduce service. Valves have to be ground after 1000 miles now instead of 5000 and carbon has to be removed oftener.



# If You Aren't Sold on Business You Aren't Sold on the War

*Sitting at a Desk, Gazing at the Future, Is One Sure Way of Not  
Helping in the Big Job of Turning Wilhelm Into Plain "Bill"*

By RAY W. SHERMAN

**H**ENRY BENNETT, who sold the Redman—when there were any—in and about Callawassa, sat at his desk—and sat—and sat.

He had been sitting thusly for several weeks, and more so than usual lately.

Henry couldn't understand it. His business seemed to be off more than that of his competitors. He had secured a truck and tractor agency. He had a few Redmans in stock. He had quite a lot of his sales organization still on the job. But there didn't seem to be any business coming in.

"Lucky cuss!" mused Henry to himself, as Reilly, his schooldays friend, appeared in the door.

Reilly wore a clean straw hat. He had on a silk shirt. His suit was nifty and businesslike. He looked unpatriotically prosperous and happy. He was reputed to be snaking cars out of the Sennett factory and selling them to farmers, to be selling tractors to farmers, and to be doing the unheard-of thing of selling trucks to these same farmers—along with farm lighting systems and a flock of automotive and electrical equipment.

"How do you do it?" demanded Henry good-naturedly. "You look like money—and they say you're making it!"

"Easy!" said Reilly, and he made a grab into the air and came back with a half dollar.

"Oh, I see!" said Henry. "I'll try it."

"Just dropped in to tell you your factory doesn't seem to love you as much as it thought it did."

"WHAT!" Henry rose at least an inch and a half.

"Yes; sure as fate! Factory man is nosing around town to see if any one else wants the agency," replied the Sennett dealer.

"WHAT!" Another inch and a half of elevation. "Crooks! Liars!"

"Know what he said?"

"What?"

"Said you had settled down in your chair and weren't making any effort to do anything except read the war news and look blue. He said you could get cars but were not selling any. He said—"

"The—" began Henry, but Reilly held up a silencing hand.

"I think a lot of it's true, Henry. I've been wanting to say something to you about it for a long time. I told you about what might happen a long time ago—but it must have slipped your mind."

"As near as I can figure, Henry, you've

successfully sold your own organization on the unpatriotism of making money, and the whole gang of you is sitting around doing nothing except wonder when the war will end and who will win it. If we all operated the way you do there wouldn't be any doubt as to who would win—"

"What!" Again Henry went up a little.

"Oh, it's all true, Henry. I know. News travels fast along the Row. Everybody knows you've been working on a blue funk basis for a long time—and it's finally got into your business to such an extent that you're in danger of slipping off the map entirely."

"When the war began to get under way you entered actively into patriotic matters. You made your organization come across for bonds and the Red Cross and all the other things. And then you began to preach what you thought was the acme of patriotism. You kept saying over and over that the dealer who came through this war without any profit but with a going business would be a lucky man."

"Won't he?" Henry demanded.

"Sure he will!" exclaimed Reilly. "But that doesn't mean he should lie down on the job and not try to make any profit. It isn't patriotic to sit idly by and watch the whole business world go to smash. What you want to do is get that organization of yours together and resell them on the idea of business if it can be had."

"By saying a dealer will be lucky if he comes through with no profit but with his organization intact we mean that he may not make any profit no matter how hard he works, but I want to add something to it, and that is this: The dealer who doesn't work—and work hard—will come through without any profit or organization either."

"You've got a truck agency here, and you aren't doing a darned thing with it. You have cars to sell, yet you don't sell them. You could have had a farm lighting system and a tractor, but you passed them up because you couldn't see this automotive dealer stuff. And so you have gone on from day to day, getting worse and worse, and your salesmen have arrived at the point where they believe you don't expect them to make any money—and I don't believe you do."

"What I'd do is get this gang of yours together and tell them you are going on a war basis, which means work like hell

and try to save your business ship if you can, and that every man who produces is assured of a job, and every man who doesn't produce had better get a job heading rivets."

"I'd can every business slacker in the place. I'd work out sales plans and business economies that are real economies and not backward steps. I'd make this old place spin and then some, and if I didn't make any profit I wouldn't worry, but I'm darned if I'd die and have it said I didn't die fighting. Folks don't care whether you're dead or not. All they're interested in is how you died."

"You have a service department out there that can be made a revenue producer, but it's the same old loss to you it always was. You have a spindling little accessory department that could be made into a hummer. There are thousands of farmers in your territory who want your trucks, and if you rustle around a little you may be able to get the farm lighting system you passed up. But you won't get anything except a business tombstone unless you show a little more action than you have during the past few weeks."

"The War Industries Board and Congress down at Washington are doing the best they can to win the war and preserve our businesses at the same time, and what kind of help are you if you sit here in your chair and help kill business off?"

"You hoot and howl about this and that—with once in a while a yip about your patriotism—and all the time you are helping kill the one thing that can help us win the war, and that's our American business organization. If your organization can make money it can support the war and your business can pay taxes, but if you don't make any money you aren't any help to anybody except old Kaiser Bill."

"What you need is a new slant on life, a new vision of business and a little spizz. And the one thing you don't want to overlook, old top, is that if you aren't sold on business you aren't sold on the war. War is our big business to-day and all the little businesses have got to support the big one."

"So cheer up, Old Kid!" And the slap Reilly gave Henry's back gave the Redman dealer's glasses such a jolt that when Henry readjusted them he really seemed to see differently through them.

# Farm Light's Biggest Future

*Is For the Man Who Gets In Now*

A Man Who Has Illuminated Farms for Farmers for  
the Last Six Years Tells What This Coming  
Business Holds for the Automotive Dealer

"THE farm light plant now is a selling proposition. The time has not yet come when people will come in to buy it. That day is coming, and perhaps very soon, and those who want to get the velvet out of the business had better get in soon," said R. J. Williams, sales manager of the Lalley-Brockman Farm Light Co., 3118 Locust Street, St. Louis.

"In my six years in farm lighting plant selling I have not found the motor car dealers the ideal retailers, *but that is rapidly changing.* The business conditions in the motor car world are making some dealers wonder who is going to pay the overhead for the next few years. That is one reason.

## Automobile Owner Good Prospect

"Another is that the motor car dealers are coming to realize that every automobile owner, who does not live on an electric light wire route, is a prospect for a lighting plant.

"But the biggest factor is the reliability of the new electric light plants and the many things they can do—the utility and earning power. These things are certain to make the light plant a merchandising proposition later, but it is still a selling proposition, and the man who wants later to merchandise it and the accessories *had better be getting in soon.*"

Williams ought to know something about this business, for he has been in it six years until the last few months selling acetylene gas plants. Last year, he says, was the biggest year he ever had, but he saw the end was coming and when Phil Brockman, Oldsmobile distributor in St. Louis, as the De Luxe Automobile Co., asked Williams to join him in electric farm light selling, Williams came.

He had been in charge of the Chicago office of a big company, and he brought with him his six salesmen, everyone of whom was willing to leave the gas light district and line up with the juice that

makes the great white ways in the cities.

"We have been progressive," said Williams, "and each year was better than the previous one and we are going right ahead. Now we expect to enlist the automobile men for their own and our good.

"I know of no business that is as purely psychological as the farm lighting business.

"Go back to the beginning. The farmer was a tightwad—and he lived to himself and saw little of the world. Visiting the county seat was an event, also a day's lost time for him and the mules. Then motor cars began to go whizzing by his place and his pride was stirred. *Most of all the farmer is and always was proud.* Eventually he bought a motor car. It was not sold to him. He bought it. The automobile people overlooked the farmer as a prospect until he had bought a lot of cars.

"That car jarred the farmer wide-awake. He began to see that some pleasures were worth paying for. Also that some pleasures were or could be made profitable. He could get to town in a few hours. There was no lost time for the mules and only a slight expense. Also he began to see that other people did not live as he did. He became a business man. He also became jealous of the townsman because the town family looked better than his.

## Must Show Benefits of Lighting Plant

"The lighting plant has found the farmer in this frame of mind. The servant problem has become as serious as the field labor problem. The farmer has seen what labor-saving machinery will do in the field and he has bought heavily. Now you must show him what a lighting plant will do and he will buy readily and willingly.

"We sell by fitting a plant on an automobile—and we insist that all dealers so equip themselves. They go right to the home and they show what the light means, how it will supply current for irons, fans and toasters, and we tell them of the other accessories, most of them profitable, that can be used. There are cream separators, churns, water for the house and the long list of things that the city man enjoys.

"The light plant selling is a one-visit proposition, and that visit, or at least the demonstration, must be made at night. The demonstrator carries several hundred feet of extension wire. He carries this to the house and turns on his light, fan or anything else for the family. You can see the appreciation. The comparison with the oil lamp is even more wonderful there at home than in comparing the home light with the city light. Then you sit there under the fan's breeze and talk it over.

"The conversation runs something like this:

"'You have a binder, Mr. Farmer?'

"'Yes.'

"'Why do you not go back to the cradle?'

"'Do you use a riding plow with your tractor?'

"'Yes.'

"'Why not go back to the old walking plow?'

## Better Food Comfort and Other Matters

"After a long series of these questions, every other one of which the farmer will not answer, you can begin to talk about more and better butter, the wife getting her ironing through in time to do other work. More and better food, of course, is a very reasonable proposition.

"The pleasure and comfort come later and there is no end to this talk. This family with its motor car, daily mail delivery, telephone and other city conveniences can be appealed to very strongly, and usually this farmer, sitting there with a day's work well done, comfortably tired, his stomach full and ready to read his paper in comfort, will buy.

*"The farmer who is making money is not much impressed by a \$500 expenditure. He is used to buying things that cost what city folk think of as lumps of money. His tools on the farm run into large sums and he is not frightened at the price.*

"But you can prove to him where this machine will pay for itself in lessened insurance, better and more butter, saving of emergency help wage for the house and power for his small farm accessories."

Williams is now giving his attention to getting his salesroom fitted. He has

met many of war's delays in getting the labor and material, but he is about done. The room, built for automobile display on Motor Row, has large, well placed windows. These windows have been lighted with Lalley lights. Then comes the working plant, including a show plant with all of the castings cut to show the parts.

#### Salesroom Displays

In various parts of the room are the accessories, all of those the city user of electricity is familiar with—and some others. There is a churn, a cream separator and the water plant in operation. The latter was installed by the Fort Wayne Engineering & Mfg. Co., and the day Motor World's representative saw it E. V. Livers, of the sales department, was there to demonstrate it.

Livers is visiting the light plant dealers and coaching them on the possibilities of the water plant in the farm home, for the Lalley light system makes this water plant practically a closed incident, as the pump starts automatically when the pressure lowers. It has a lifting power of 80 ft. *This is one of the big selling features of a lighting plant.*

The Lalley-Brockman salesroom, when completely outfitted, will show a possibility of about \$1,000 OF SALES TO EACH PROSPECT.

"That is no handicap," said Williams. "Once the farmer turns spender he is not likely to be bluffed by a few little things such as we will show him. If he has a desirable family, he is likely to buy the entire outfit at once. But it is more likely that he will buy the light and water plant, and of course the iron, then come in gradually for the other things AND SURELY THE FAIRS.

#### The Farmer's Pride

"You can always bank on the farmer's pride. He does not want to be outdone. Usually he has bought his motor car because some other man has one, or he has been flattered by this leading-man-in-this-community and you-ought-to-be-first talk. That always is a strong card."

"Overselling? Not for 100 years!" said Williams in answering a question as to there being too many plants. "Remember every farmer is a prospect and farms are becoming smaller as intensified farming is applied. And there will be more farmers when they learn that a farm home can be made perfectly comfortable, as comfortable for the woman and the girls as the farm work is for the man.

"My men have sold gas plants in Missouri for six years, and I have a list of all of those purchasers. Compare that list with the farm tax list. *The surface has not been scratched and will not be for years to come.* We are more than satisfied with our territory as a large part of Missouri and Illinois. It means work for years to come, and we are building here on plans that show that we consider ourselves an institution that has come here to stay, for we are building for the future."

## Opportunity and a Patriotic Service

By R. J. Williams

***THE war and the farm light plants appear to be made for each other.***

*The war came uninvited and swept aside normal conditions.*

*The light plants had been perfected by long and faithful work.*

*The war swept aside much automobile building, leaving dealers without enough cars to sell.*

*The light plant supplies this.*

*The war swept away the servant help in farm households.*

*The light plant supplies this.*

*The war demands harder work and brings greater fatigue to farm workers, as a consequence they need more comforts for resting moments.*

*The light plant supplies this for men and women.*

*The war brought greater lure for farm folk to cities as wage earners, where greater comforts exist for the successful.*

*The light plant brings these comforts to the farm home and aids in keeping home stayers content.*

*The war demands greater efficiency in conservation of foods, butter, etc.*

*The light plant and its accessories supply this.*

*The war demands less illness among workers.*

*The light plant, with its water plant, fans, etc., supplies better living conditions—hence health.*

*The war demands that every man be usefully employed.*

*The light plant has been recognized by the U. S. Department of Agriculture as an essential equipment and the men selling them as usefully employed. We are doing business under a permit as an essential industry.*

*The light plant is not only patriotic, but it makes better patriots of all who come into contact with it.*

## Sent 21 Men to Harvest

FREEPORT, ILL., Aug. 17—The Stephens Motor Car Co. has proved its patriotism by permitting twenty-one men to help harvest a 36-acre tract of oats on the Denekas farm near German Valley. Shortage of help made it necessary for the farm to appeal to the Freeport business men. The Stephens company responded, closing its plant for the day that the crop could be gathered.

## Now a "Cafeteria Garage"

MOLINE, ILL., Aug. 16—Moline comes to the front with the first cafeteria garage. Ziegler & Mason have introduced the novelty. Here is their announcement:

"Walk in, take a tray, pass along the counter, pick up the tools you need, get a little expert advice from the man behind the counter yourself, fix the flivver yourself and pay the cashier as you go out."

The firm has found it difficult to find competent men to serve as mechanics and, in order to avoid diverting the few men employed from important jobs, it was decided to try out the plan of permitting car owners to make their own repairs where possible to do so. A small charge is made for the use of tools and other supplies and rental of floor space.

It has developed that an unexpectedly large proportion of the trouble developed can be attended to by car owners if they are able to take advantage of all the appliances available in a first class garage. The self-service plan, while admittedly an experiment, has proven an unexpected success.

## W. S. S. Societies Formed at Ford Plant

DETROIT, Aug. 17—More than 700 war savings societies have been formed in the plant of the Ford Motor Co. Between 30,000 and 40,000 employees have agreed to take war savings or thrift stamps every week to an amount that will reach the \$2,000,000 mark within a year. The societies were organized at the Highland Park plant and at the blast furnaces in the River Rouge district. It is expected that many more societies will be formed in the Dearborn tractor plant of Henry Ford & Son.

The quota of war savings societies for the state is 11,527. July 16 Michigan stood sixteenth in the list of states, with 3545. Wayne county now has 2606 societies, or 77 per cent of its quota of 3362. The number of societies in the state Aug. 10 was 4428.

## The Week's Best Theft Story

ST. LOUIS, Aug. 16—Little Rock sends the newest theft story. Charles Ross was arrested for stealing an automobile belonging to T. E. Fisher, of Wichita, Kan. He signed a confession. When officers arrived to take him home they recognized him as Fisher. He stole his own machine after having insured it and reported the theft before he drove it away.

# The Story of the Overconfident Tractor Salesman

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*F. W. A. Vesper gives this advice regarding speechmaking: If you are talking to a crowd that knows as much about your subject as you do you have to be careful what you say, but if the crowd doesn't know much about it you can say almost anything and get away with it. The same thing applies to tractor salesmanship, and if you don't believe it just read this romance of the salesman who got stuck in the mud.*

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A CERTAIN farmer near Evansville, Ind., has a field of made soil—that is, old swamp land that has been drained. This means mucky gumbo of about as stiff a consistency as one will encounter. *It is mighty hard to plow.*

This particular field had been allowed to run to pasture and on it during the last winter and spring a herd of mules had grazed and cavorted. Hard little hoofs had pounded the soil down as hard as a pavement. *But the farmer wanted it plowed.*

In the farmer's market town there is a motor car dealer who has the agency for a certain well-known tractor, which commonly is sold as a two-bottom machine. It has but one speed and has normally a drawbar pull of about 1800 lb. Under average farm conditions it can handle two 14-in. bottoms without difficulty.

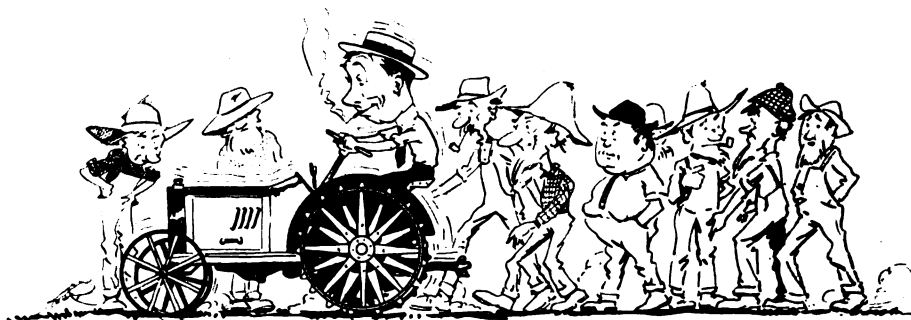
Said motor car dealer employs a tractor salesman who has not had very much experience, *but who is acquiring it.* To him, recently, a two-bottom tractor meant a tractor which would pull two 14-in. bottoms anywhere, any time, to any depth and under any conditions. It meant about the same thing to the dealer.

You see, the farmer with the gumbo field was on the dealer's list of prospects and the salesman was sent out to see him.

"I'll buy the tractor which will plow yonder field to my satisfaction," said the farmer, or words to that effect.

"Sure thing!" replied the salesman. "Invite your friends to see the show. I'll be out here Tuesday and surprise every angle worm on the place by turning him out of house and home."

Salesman hied him back to the



*Tuesday came, so did quite a few of the neighboring farmers—likewise Know-It-All Salesman and his tractor*

Salesman gave the field the "once over" from the vantage point of the barnyard, and said:

"That's a cinch. You're my meat. You'll buy my tractor. When do you want it plowed?"

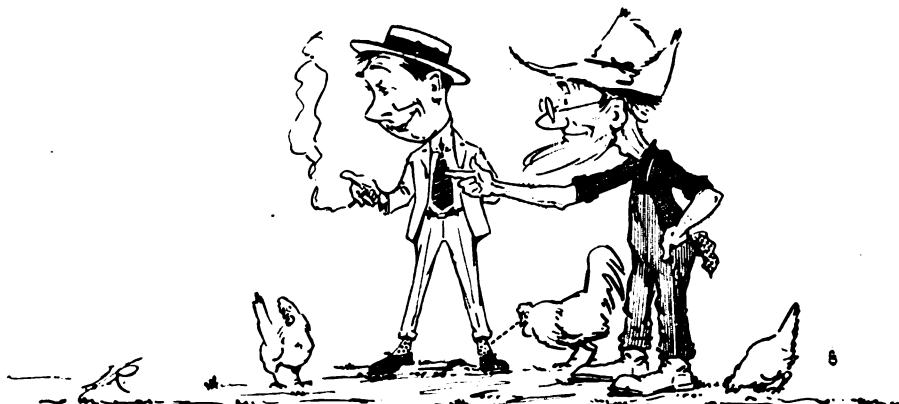
"Suit yourself," said the farmer, "but are you sure you can plow it?"

office to report. "Got old Prospect hooked," said he. "Says he'll buy the tractor that'll plow that field back of the barn. Prettiest piece of level ground you ever saw. It's in pasture now. Say, take it from me, we'll just eat that up. Said I could come out next Tuesday and show him. What's the matter with making a regular demonstration of it and inviting the neighbors?"

"Great stuff," said the dealer. "Hop to it. We'll pull a stunt that will make them all sit up and take notice."

Tuesday came. So did quite a few of the neighboring farmers. Likewise Know-It-All Salesman, his tractor and his plow. Pretty sight. There lay that field just itching to be tickled. And he was just the boy that could do the job.

Mr. Farmer, who owned the land, perched himself on the fence, stuck a straw between his teeth and waited for things to happen. You see, he



*"I'll buy the tractor which will plow yonder field," said the farmer*



was going to buy a tractor, but he didn't know yet just which one. He was open to conviction, but he was from deepest Missouri.

Salesman got all set, cranked his motor, mounted his seat, let down his plows and started. Then things did begin to happen. Plows ran a few feet under ground, then came up for air. After a breath or two they started under again, got a good grip—and the tractor gave a convulsive grunt or two and balked—much like a horse in a 5-ft. snow bank. Salesman got down, looked things over, cranked up again and gave her another whirl. Same result—only more so.

In the course of time, by dint of a good deal of coaxing, more profanity and considerable sweat, he managed to get once around the field. His progress had been a good deal of a hop, skip and jump sort. What should have been a clean-cut furrow looked like a day message from an aeroplane in Morse code. There were dots and dashes of turned-over sod, while the spaces still waved their tops of grass defiantly.

Farmer suggested blandly that what he wanted was a plowed field, not one just punctured here and there and maybe the salesman had tackled something he couldn't do. Salesman opined that something, he didn't know just what, was the matter. Visiting farmers said that as an exhibition of plowing it wasn't much, but that it was interesting and exciting as a game of leap frog. Then they all went home.

A few days later another tractor salesman, with another make of tractor, also of two-bottom capacity, but with two speeds and an operator who was onto his job, tackled the same field on low gear and plowed it successfully. It is interesting to know too that he got the farmer's check before he left the place.

Actually, there is little difference



*That field just itching to be tickled, and he just the boy that could do it*

in the power of the two tractors. Both are sold as two-bottom machines, but the latter had an advantage in this particular instance of the low speed, which had the effect of increasing the drawbar pull. On high it would have come no nearer meeting the conditions than did the first machine.



*Mr. Farmer perched himself on the fence, stuck a straw between his teeth and waited for things to happen*

Now this isn't just a fancy sketch. It actually happened. It's true. The Motor World man saw the field. An eye witness told what happened. The Motor World man talked with both dealers. It's worth while, because it teaches something.

That something is this: In plowing the determining factor in tractor efficiency is the soil condition. It teaches also that the dealer, until he knows what conditions he will have to meet, cannot guarantee what his tractor will do, especially if it happens to be of the small, two-bottom type.

In this case the tractor with 1800 lb. pull at the drawbar—which was its maximum—could have pulled one bottom, but it could not handle two. It might have pulled two smaller bottoms, or it might have plowed at less depth. In all probability neither would have satisfied the farmer. If the salesman had been onto his job as he ought to have been he never would have got in as bad as he did.

Even the second salesman was taking a good deal of a chance, but, knowing better what he was going up against, he took what precautions he could and he got away with it. He reduced the chances of failure to a minimum.

The truth is—and this every man who goes into the tractor business must bear in mind constantly—a tractor, like every other piece of mechanism, has limitations. The over-confident salesman is he who is ignorant of these limitations or who ignores them. In either case he is going to get in bad.

The wise salesman will be sure of his ground—and this is meant in all the meanings of ground—before he makes confident assertions as to what he can do. He is far more likely to make tractor sales which will be satisfactory to the farmer and the dealer.



*Farmer suggested blandly that what he wanted was a plowed field, and maybe the salesman had tackled something he couldn't do*

#### "Sedgley" Not "Wrench" Company

In a story in Motor World concerning Hexall wrenches the name of the manufacturer was given as the Sedgley Wrench Co., Philadelphia. The manufacturer of these wrenches is R. F. Sedgley, who, in addition to wrenches, makes a line of revolvers which are extensively sold by automotive equipment dealers.

# A Department of BETTER MECHANICS

No. 79

## Overhaul Operations on the Koehler Trucks

**T**HERE are two models of the Koehler truck, 1½ and 3 tons, and two capacity tractors. Unless especially stated, the operations are identical on all models, as they do not differ in design but in size of parts only. The adjustments, assemblies and repair operations are recommended by the factory, and are the methods that have proved best after long experience.

### Timing the Valves

The engines are properly timed when they leave the factory and cannot get out of time unless the camshaft is removed for any purpose. The flywheel is enclosed in a housing, and on the top of this housing is a small cover known as the "peephole."

1—Remove two cap screws from peephole cover.

2—Remove cover.

3—Marks on flywheel will be visible through the hole.

4—The following are the marks, with their meanings:

TC14—Top center on cylinders 1 and 4.

TC23—Top center on cylinders 2 and 3.

IN014—Intake opens on cylinders 1 and 4.

IN023—Intake opens on cylinders 2 and 3.

EX014—Exhaust opens on cylinders 1 and 4.

EX023—Exhaust opens on cylinders 2 and 3.

INC14—Intake closes on cylinders 1 and 4.

INC23—Intake closes on cylinders 2 and 3.

EXC14—Exhaust closes on cylinders 1 and 4.

EXC23—Exhaust closes on cylinders 2 and 3.

5—The cylinders are numbered from No. 1 nearest the radiator to No. 4 nearest the driver's seat.

6—The alignment of the marks is to be taken to the center of the peephole.

7—The firing order is 1-2-4-3.

8—When TC14 is in line with the center of the peephole, cylinders 1 and 4 are on top dead center, and the pistons

By J. HOWARD PILE

in these cylinders are at their highest point of travel, while the pistons in cylinders 2 and 3 are at their lowest point of travel.

9—Standing in front of the engine, rotate the crankshaft in a clockwise direction, or the direction in which the engine runs, until the piston in No. 1 cylinder nears the top of its stroke.

10—Watch for mark IN014 to appear through the peephole.

11—Keep turning until this mark is exactly in the center of the hole.

12—Keeping the crankshaft in this position, rotate the camshaft in a counter clockwise direction until the intake valve of No. 1 cylinder just starts to open.

13—Hold both shafts in position and mesh the camshaft gear with the crankshaft gear.

In case the marks on the flywheel are indistinct, or for any other reason cannot be seen, the timing can be checked up as follows:

1—Without removing engine head, insert a piece of ¼-in. drill rod in the spark plug hole of No. 1 cylinder, this rod to be notched with a file at the point of highest piston travel.

2—Turn the engine in a clockwise di-

rection till the rod shows that the piston is all the way up and make a mark on the flywheel.

3—Turn the engine in a counter-clockwise direction till the rod again shows that the piston is all the way up and make a mark on the flywheel.

4—These two marks will be from ½ to 2 in. apart, depending on the slack in the bearings and the care used in stopping the piston at the top.

5—A mark midway between the points will be the time dead center for cylinders 1 and 4 represented by the mark TC14.

6—If the marks are not legible they can be laid out, using this mark as a starting point or zero, as shown in Fig. 4. This diagram represents the circumference of the flywheel laid out flat, TC being at the ends. The dimensions shown are those developed from the valve diagram, Fig. 2, in which the points of opening and closing the valves are expressed in degrees measured from TC.

Fig. 2 shows the four parts of the complete cycle of two revolutions of the flywheel. This is more clearly shown on the separate diagrams. Fig. 3, in which the valve operations during the two revolutions are shown separately. Note that the spark occurs 2½ in. before top center, this representing the most efficient advance for fixed spark running with this engine.

### Timing the Spark

If the magneto has been removed for any reason the following instructions should be carefully followed in replacing it so that the timing of the ignition will be correct.

1—Turn the engine crankshaft in a clockwise direction, that is, the direction in which it runs under its own power, until the mark TC14 appears through the peephole in the flywheel casing. The piston of No. 1 cylinder will then be at the highest point of its stroke.

2—Then turn the crankshaft back a distance of 2½ in. measured on the circumference of the flywheel. The piston of No. 1 cylinder is then at a point near the end of the compression stroke that

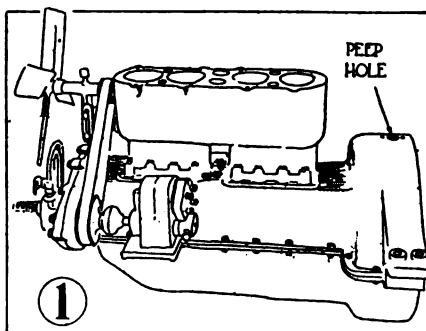


Fig. 1—The peephole of the Koehler engine is on top of the flywheel housing, and the cover is easily removed

has been found best for the spark. Leave the engine in this position.

3—Remove distributor and breaker box covers from magneto.

4—Insert a piece of cigarette paper between the contact points of the breaker, Fig. 6. It will be found that there is sufficient pressure between the points to hold the paper against a slight pull when the fiber end of the breaker arm is free from the cams which project from the inside of the breaker box.

5—Place the magneto in position on the bracket so that the teeth of the coupling just clear each other, Fig. 5.

6—Turn the magneto half of the coupling slowly with one hand while holding the cigarette paper with the other until the paper slips out. This shows the point at which the spark occurs. See that the distributor arm is facing the collector terminal which leads to the spark plug of No. 1 or No. 4 cylinder. Then without disturbing the position of the shaft, slide the magneto into engagement and bolt in place.

The firing order of this engine is 1, 2, 4, 3, as mentioned above, which means that, counting in the direction taken by the distributor when the engine is running, the high tension current is passed successively to the spark plugs by way of the terminals on the distributor cover in that order.

### READ

## The Story of the Dealers Before the War Board

on page 5

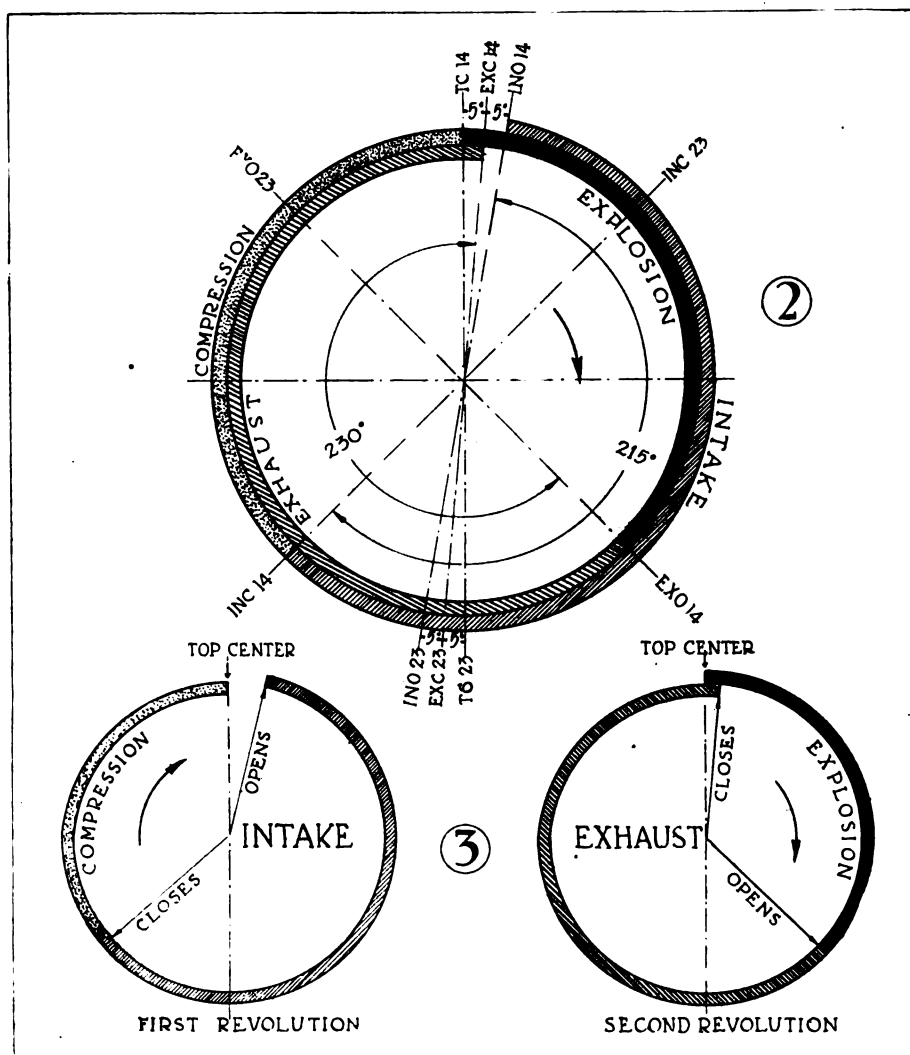


Fig. 2—Valve timing diagram of the Koehler engine. Fig. 3—Valve timing diagram split up to show the timing of each revolution separately

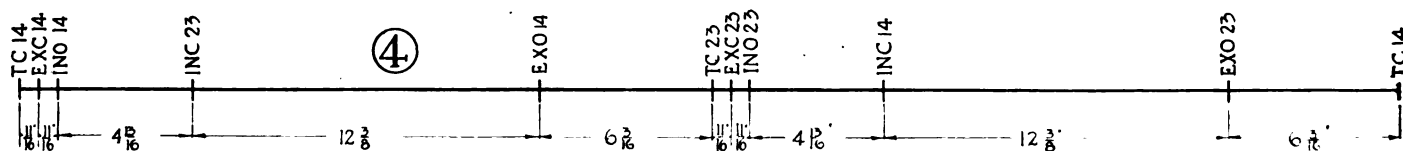


Fig. 4—Valve timing of the Koehler expressed in inches on the flywheel rim. If this is laid out on a strip of paper and wrapped around the flywheel rim the marks may be punched on the rim

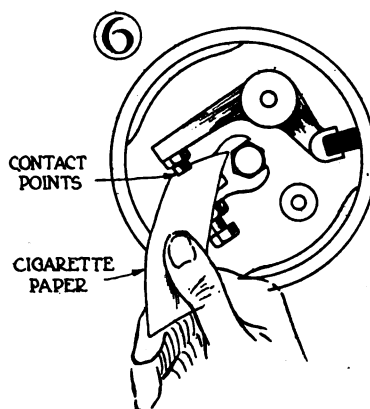
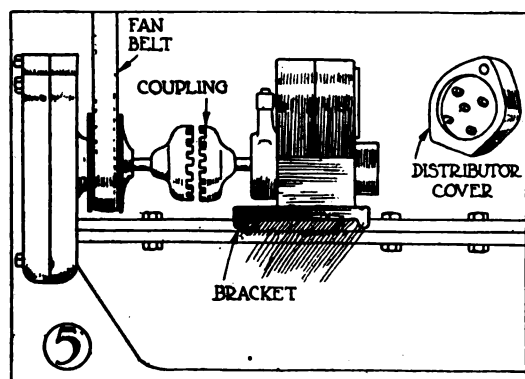


Fig. 5—The spark is set by separating the serrated edges of the magneto coupling and turning the No. 1 cylinder to fire when the flywheel is  $2\frac{1}{2}$  inches ahead of TC14

Fig. 6—The beginning of the break is found by inserting a cigarette paper between the contact points. When it is pulled out the break is starting

The editor of this department is glad to answer questions. In sending queries, always include copies of contracts, notes, etc., to which you refer.

# THE LAW

By George F. Kaiser

As It Applies to  
Dealers  
Repairmen  
Garagemen

## Changing of License Numbers a Misdemeanor

Editor Motor World: Kindly let us know if there is any law covering the changing of motor numbers and what the penalty is.—Taylor's Garage, Inc., Haverstraw, N. Y.

Answer—The motor vehicle law provides: "Distinctive number must be carried on motor vehicles. No person shall operate or drive a motor vehicle on the public highways of this state after the first day of August, nineteen hundred and ten, unless such vehicle shall have a distinctive number assigned to it by the secretary of state and a number plate issued by the secretary of state with a number and other identification matter, if any, corresponding to that of the certificate of registration conspicuously displayed, one on the front and one on the rear of such vehicle, each securely fastened so as to prevent the same from swinging."

A violation of the above is a misdemeanor punishable by a fine of not exceeding \$50.

If the numbers assigned by the secretary of state were changed and used it would be a misdemeanor.

## Misdemeanor to Issue Bad Check in Wisconsin

Editor Motor World: I notice on page 20 of the July 31 issue of Motor World that you set out a new law with regard to the making of bad checks in New York. Can you tell me if there is any law making it a crime to give a bad check in the state of Wisconsin.—A. A. Co., Milwaukee, Wis.

Answer—A new law was passed in Wisconsin last year which makes it prima facie evidence of intent to defraud to make, draw, utter or deliver a check when there are not sufficient funds in the bank to cover. The Wisconsin law is very similar to the New York law you mention except that in New York the maker is guilty of larceny, while in Wisconsin the maker is guilty of a misdemeanor. The Wisconsin law reads: "Any person who, with intent to defraud shall make or draw, or utter or deliver, any check, draft, or order, for the payment of money, upon any bank or other depository, knowing at the time . . . that the maker, or drawer, has not sufficient funds in, or credit with, such bank or other depository for the payment of such check, draft, or order, in full, upon its presentation, shall be guilty of a misdemeanor, and punish-

able by imprisonment for not more than one year, or by a fine of not more than \$1,000, or both fine and imprisonment.

"As against the maker or drawer thereof, the making, drawing, uttering, or delivering of a check, draft or order, payment of which is refused by the drawee, shall be prima facie evidence of intent to defraud and of knowledge of insufficient funds in or credit with, such bank or other depository, providing such maker or drawer shall not have paid the drawee thereof the amount due thereon, together with all costs and protest fees, within five days after receiving notice that such check, draft or order has not been paid by the drawee.

"The word credit as used herein shall be construed to mean an arrangement or understanding with the bank or depository, for the payment of such check, draft, or order."

## New York Lien Law

Editor Motor World: Just how far does the New York garageman's lien law extend? By this is meant on just what does the lien attach? Does it apply to parts as well as to the car itself? Suppose they are brought into a shop to be repaired; suppose parts are given to the owner and are not put on the car by the seller.—J. W., New York, N. Y.

Answer—The New York lien law reads as follows:

"A person keeping a garage or a place for the storage, maintenance, keeping or repair of motor vehicles, as defined by Article II of the highway law, and who in connection therewith stores, maintains, keeps or repairs any motor vehicle or furnishes gasoline or other supplies therefor at the request or with the consent of the owner, whether such owner be a conditional vendee or a mortgagor remaining in possession or otherwise, has a lien upon such motor vehicle for the sum due for such storing, maintaining, keeping or repairing of such motor vehicle or for furnishing gasoline or other supplies therefor and may detain such motor vehicle at any time it may be lawfully in his possession until such sum is paid."

Under this law a person, which includes an individual, co-partnership, or corporation, who keeps a garage or place for the storage, maintenance, keeping or repair of motor vehicles and who stores, maintains, keeps, repairs, furnishes gasoline, or furnishes other supplies has a lien for the sum due and may keep a car in his possession until he is paid. Of course, the car must come into the garageman's

possession in a legal way or he cannot assert his lien.

If parts are brought in to a shop to be repaired the dealer has a right to hold them under his claim of lien until his charges are paid. When possession of an article is given up, however, the lien is lost. If parts are given to the owner and are not put on the car by the seller, the latter cannot claim a lien, despite the wording of the statute, unless he has lawful possession of the car, and the same applies to the furnishing of gasoline.

The garageman's whole right to a lien is founded on possession. Before there was a garageman's lien law in New York a garageman had no lien on cars kept on live storage, and he still has no lien if an owner fails to bring his car back and restore it to the garageman's possession.

## Time Allowed Motorists in Various States

The following compilation of the laws of the various states regarding the time allowed automobiles registered by other states has been prepared under the direction of Francis M. Hugo, Secretary of State of New York:

Alabama—Reciprocal  
Arizona—6 months  
Arkansas—Reciprocal  
California—3 months  
Colorado—90 days  
Connecticut—Reciprocal  
Dist. of Columbia—Reciprocal.  
Delaware—Reciprocal  
Florida—30 days  
Georgia—30 days  
Idaho—Reciprocal  
Illinois—60 days  
Indiana—60 days  
Iowa—Reciprocal  
Kansas—30 days  
Kentucky—Reciprocal  
Louisiana—Reciprocal  
Maine—30 days  
Maryland—Reciprocal  
Massachusetts—Reciprocal  
Michigan—90 days  
Minnesota—30 days  
Mississippi—60 days  
Missouri—20 days  
Montana—Reciprocal  
Nebraska—30 days  
Nevada—30 consecutive days  
New Hampshire—10 days in one year  
New Jersey—15 days  
New Mexico—60 days  
North Carolina—15 days  
North Dakota—Reciprocal  
Ohio—Reciprocal  
Oklahoma—Reciprocal  
Ontario—21 days  
Oregon—30 days  
Pennsylvania—Reciprocal  
Rhode Island—10 days  
South Carolina—County registration—Reciprocal  
South Dakota—Reciprocal  
Tennessee—Reciprocal  
Texas—County registration—Reciprocal  
Utah—30 days  
Vermont—Reciprocal  
Virginia—2 periods, 7 days each  
Washington—90 days  
West Virginia—Reciprocal  
Wisconsin—Reciprocal  
Wyoming—Reciprocal



# *Why the Dealer Should Use* **The Cash Basis Plan**

By H. J. SCHWARTZ

*President Standard Motor Car Co., Columbus, Ohio*

**T**HERE should be no need for arguments on the subject of the cash system. It is one of the recommendations of the War Economy Board of the Council of National Defense. That in itself should be sufficient reason for its adoption; however it might be of interest to some to consider the subject without regard to their recommendations with the idea of determining the question on its merits.

The company with which the writer of this article is connected went on a cash basis last October, feeling that it was a protective measure and justifiable by the conditions and really quite essential. In our minds the cash system is justified for the reasons and because of the conditions mentioned—to insure the dealer receiving enough money from repair parts and labor sold to at least allow him to break even rather than to operate his service department at a loss. The service department of most automobile establishments have been operated at a loss, though in many instances a book profit is shown from month to month; the difference, however, in book profit and real profit is quite considerable, for it is one thing to consider accounts receivable due for repairs as assets and another to have the actual money, to the amount represented by the accounts receivable. Many dealers have gone on for years carrying as assets accounts receivable, of which over one-half was uncollectable.

## **Damage Caused by Free Service**

This condition was caused by the almost universal practice among automobile owners of disputing service charges as a matter of principle. I suspect the popularizing of the free service idea really did more damage than any one thing, for it is a well known fact that even if a dealer gives free service unstintingly for a number of years, as soon as it is stopped and the dealer begins to charge for work disputes start right then.

Owners have for years been forcing dealers to give a great deal more service than the dealer felt that he should by simply having everything charged and making the payment of the bill contingent upon the deduction of a part of it. Probably if there had never been such a thing as free service there would never have been any of the troubles which make cash for the services necessary.

Owners who object to paying cash for

services usually do so on the ground that it is inconvenient, which objection has some merit to it, but we think we have found the biggest objection to the cash system quite naively expressed by many to the effect that it leaves no chance for argument and that it does not give the owner an opportunity to object to what HE thinks are unjust charges. Owners who express this sentiment, and I know of a number who have, miss the humor in it, for it is to do away with argument and to eliminate objections, mostly unjust, that the cash system has been adopted by many automobile dealers. It is indeed too bad that the hardship of inconvenience must be worked on some who find it inconvenient to pay cash, but the owners themselves though have forced the issue. For years we have been put to the, many times, extreme inconvenience of waiting months for our money, only to take what the owner was willing to give us and only what he thought we should have without regard to the amount of the account, so that I think the latter inconvenience will more than offset the former.

## **Cash Basis Versus Credit System**

With the cash system in effect the dealer has something to say in deciding whether or not charges are just. Where the credit system is operating he has little to do with the decision. On a cash basis if there are any complaints they will be made at the time the work is completed, or shortly afterward. On the credit system rarely did you ever hear a complaint until weeks or even months afterwards, during which time the dealer had hundreds of transactions to think of. He couldn't be expected to have a clear remembrance of a particular matter of work on one person's car, whereas the owner having only the one car could give more attention to thinking up reasons why he should not pay the amount as it stood. Another angle is this: I said above that most owners disputed automobile bills as a matter of principle. I think that is true. A very popular sport among groups of friends owning automobiles has been to see which could get the most service for the least money. Now in a dispute between a dealer and an owner the dealer has furnished the labor for which he has paid, the parts for which he has paid, and the overhead expenses. The owner has his car and the money due to reimburse the dealer for the outlay mentioned; in addition, there is frequently the desire on the part of the owner to

just naturally get something off; under such circumstances what chance has the dealer short of the courts?

Still another thing, we all know of owners coming in for work on their cars having in mind the producing of certain conditions by the work or the elimination of certain conditions. An owner's description of what is wrong is rarely ever much help in determining an obscure condition. That's because his conception of what is wrong with the car is due to the lack of knowledge of the mechanics of the car.

Perhaps a good job is done repairing the car we are talking about. Carbon has been cleaned, valves ground, ignition tuned up perfectly and further definite operations performed resulting in the betterment of the car; the owner takes the car out and because some condition, which only he knew about, still remains, he condemns the whole job as no good and refuses to pay any of it, or at least insists on a larger part of it being taken off.

There are many other arguments for the cash system. For example, having to do work we know will be closely scrutinized by the owner and making collection at once tends to produce better work in the shop. It makes far better accounting methods, for charges must all be in and the bill made out almost as soon as the car is finished. Dealers have lost thousands of dollars in either forgetting to make charges or charging them improperly.

## **Closer Watch on Service Department**

It permits of keeping a closer watch on the operation of the service department; you know what you pay out, you know that all the work you have sold should be represented by cash taken in, you have only to add your indirect expenses and you can have a fairly accurate statement weekly, so you know where you stand, and if you find your income not properly proportioned to the outgo you can regulate it. The other way you never knew because you never knew how much of the work for which you charged customers was ever going to be paid.

I don't think I want to say anything more about the cash basis. We put it into operation and we have not deviated one iota from the original orders, covering the change from credit to cash. These orders were very simple. "On and after a certain day everything sold at the service department should be for cash only."

# Repairshop Shortcuts

*From Motor World Mechanics*

## No. 1492—PRESERVING RADIATOR HOSE

Radiator hose is preserved by rolling it in a tire ring, tying the full length of the hose about every foot or so. This hose comes in 12 ft. lengths and when rolled up in a small roll becomes kinked and cracked. With this device, when a piece of hose is cut off, the next string holds the hose on the ring and does not allow it to unroll. A tag may be tied to the ring itself, on which may be marked the size and price.—R. D. Martin, Martin Automobile Co., Plainfield, N. J.

## No. 1493—BLOCK FOR CURING TUBES

A block for curing tubes where the puncture or blow-out is on the splice is made by taking an ordinary tube block and cutting an offset in it for  $\frac{3}{8}$  or  $\frac{1}{2}$  in., depending upon the thickness of the tube. The edges are rounded so that it will not cut the tube.—G. Mark-Pipe, Good Bros., Bloomington, Ill.

## No. 1494—MOVABLE SHOP BENCH

A movable shop bench is made very much like an ordinary work bench, excepting that a shaft and small cast iron wheels are installed on the legs on one end of the bench, the shaft passing through improvised brass bushings made of pieces of pipe. The other end of the bench is provided with folding handles attached to the legs. The back of the bench has a small rack for tools, and a drawer is made for small stuff, while under the bench is a compartment for the parts of the car being overhauled.  $1\frac{1}{2}$  in. planks are used for the top and 4 x 6 in. timbers used for the legs.—Charles H. Willey, Concord, N. H.

## No. 1495—KEY PULLER

An inexpensive rig for extracting headed keys is made from a long steel bolt, the head end of which is cut off and the body end drawn out flat and offset. A hole is cut for the key-head, and a hole drilled for the clamping bolt. A small piece of flat stock is used for a strap, the end of which is bent up at right angle. Common pieces of bar stock are used for the frame to hold the ring.—Charles H. Willey, Concord, N. H.

## No. 1496—GASKET CUTTER

A gasket cutter is made from a piece of pipe, one end being filed off on the outer edge to make it sharp and a wooden handle turned for the other end. Differ-

**Make a Dollar**

*HOW often have you been compelled to rack your brain to overcome some difficulty? But when you did find a solution—what satisfaction it was! Well, here's a chance for you to dig some of those life-savers out of their hiding places and put them to work for your fellow-craftsmen. Send them to Motor World. We will pay you a dollar for every one accepted for publication.*

*The only requirements are these:*

*1—Describe the shortcut briefly but clearly, in few words.*

*2—Send a sketch, in pencil or pen, no matter how rough; our artists will finish the job.*

*3—Write on ONE side of the paper only.*

*4—Sign your name and initials, the name of the company you are with, and the town.*

*Write plainly. If your name is unusual, print it in capital letters.*

ent size cutters may be made from different sized pipes from  $\frac{1}{4}$  to 2 in. The wooden handle is turned down so that it fits inside of the dull end of the pipe for about one inch. A hardwood block is used underneath the edge when cutting out the gasket.—Sebastian Frye, Ironton, Wis.

## No. 1497—HANDY CATCH-ALL

A catch-all for small parts is made by using three discarded brake drums, which are mounted on a long bolt and spaced by sections of pipe. A circular piece of tin is laid in the bottoms to cover the holes. These trays are handy for small pins, nuts, keys, etc.—Charles H. Willey, Concord, N. H.

## No. 1498—WRENCH PLATE

A wrench plate for tightening and loosening the set screws on the old-style lathe dogs is made from a piece of  $\frac{1}{2}$ -in. steel plate. A tapering slot is cut in the upper part, the small and large widths being determined by the range of the set screws used in the shop. The plate is bent to right angles and the clamps for holding it on the bench are formed by cutting and bending the ends of the plate to the required shape.—Charles H. Willey, Concord, N. H.

## No. 1499—COMBINATION GRINDER AND ROTARY BRUSH

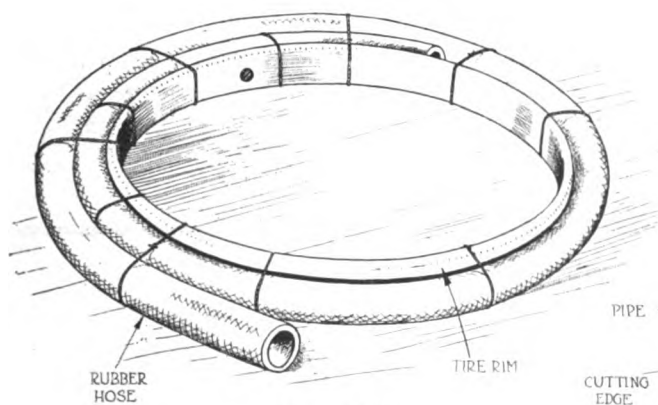
An old fan motor is connected with an old drill chuck by means of a speedometer shaft. Drills and other devices, such as a stiff wire brush for cleaning carbon or removing enamel or valve grinding devices may be used in the chuck. Different motors and different drill chucks require different means of connections. The fan motor may be mounted on its own base or a special base may be made for it.—W. B. Wheatley, Charlotte, N. C.

## No. 1500—STOPPING GASKET LEAKS

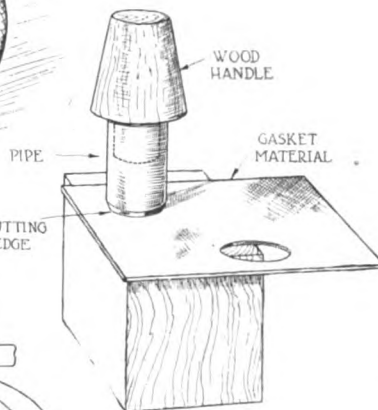
Oil leaks between a Ford cylinder block and the engine pan can be stopped by a few blows of a hammer, driving the flexible engine pan up against the cylinder casting.—Robert B. Murphy, Ford Motor Co., Detroit, Mich.

## Will of Frank E. Stanley

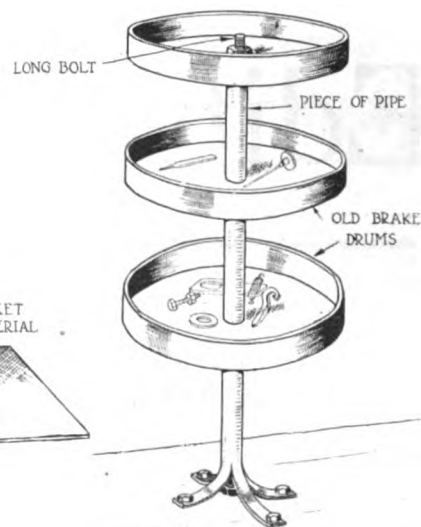
NEWTON, MASS., Aug. 17—Francis E. Stanley, inventor of the Stanley steamer, who was killed in an automobile accident on July 31 while returning here from his summer home in Maine, left an estate that those who know the facts state will approximate \$500,000. In his will filed a few days ago he left \$100,000 to his son, Raymond W., and the rest of the estate to his wife. He cut off entirely his two daughters, who are married to Prescott Warren, president of the Stanley Motor Car Co., and Edward M. Hallet, also connected with the company. The business of constructing steam motors for railroad trains was reserved by Mr. Stanley when he sold out his interests in the automobile business to Western capitalists, and it is being carried on now, orders having been received from some roads for these motors to be used on short runs. One of them is operating very successfully in Vermont on the Boston & Maine Railroad.



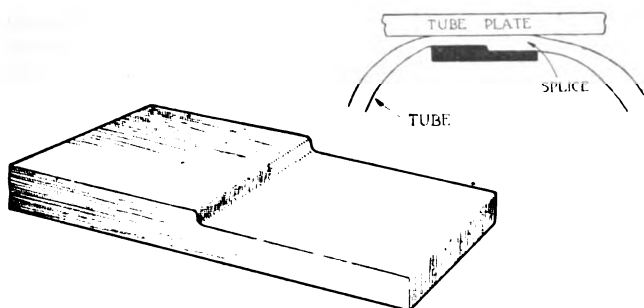
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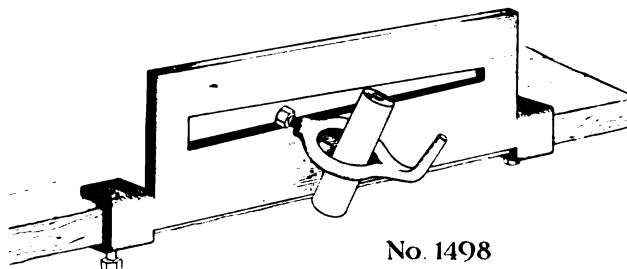
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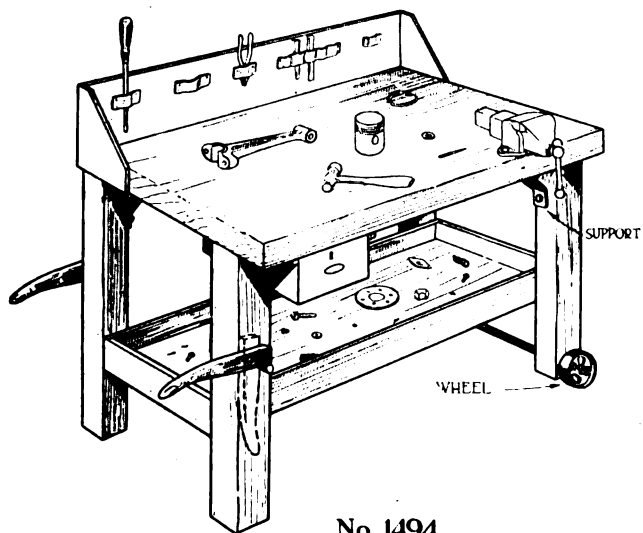
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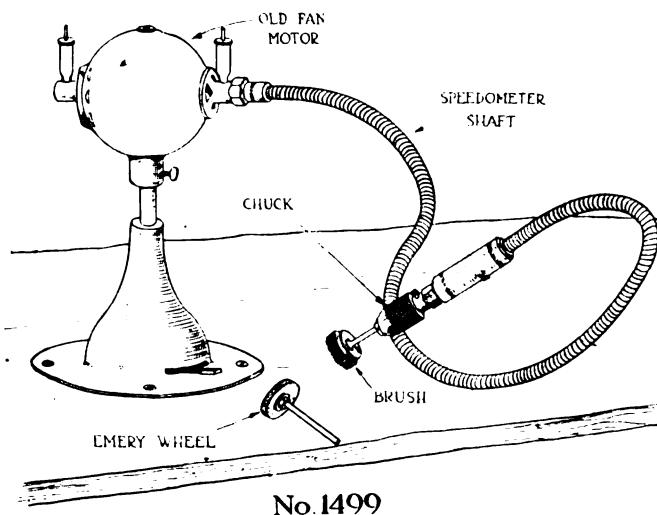
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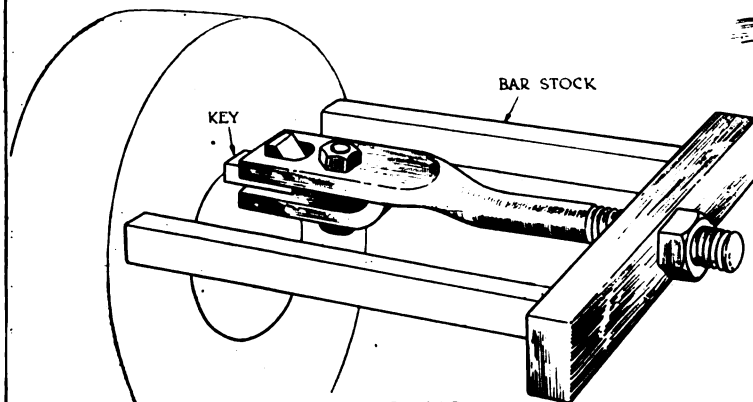
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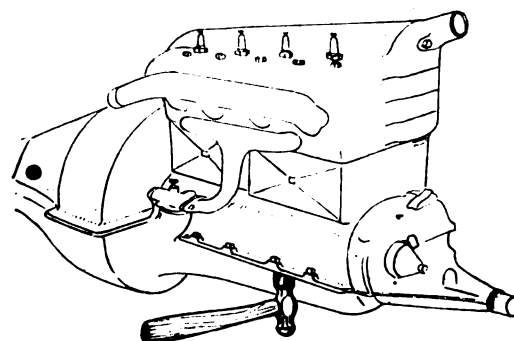
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No. 1495



No. 1500

# Editorial Observation

## Rural Motor Express

**I**N THESE days dealers must do a lot of figuring. It is a time when everything is changing.

Dealers must figure out what new things they can add to their business to keep up the volume as the car sales business falls off.

Some are taking tractors, others are taking trucks, dealers who hitherto have seemed far remote from accessories have established accessory departments—or automotive equipment departments.

And since all this figuring must be done the dealer should include the Rural Motor Express in his calculations. It is one of the new movements, one which some day is going to be a big factor in our national life and one which marks the dealer who gets back of it as an aggressive man and a trade leader.

The other day McAdoo said the railroads ought to be run by water-made electric power and not by coal, which is a mighty sensible plan when you think it over. But he can't do it now because of the manner in which the roads are held by the Government.

We have all seen the railroads fall down under stress, and one of the first things to be eliminated was the short haul. The motor truck stepped in and helped out on many occasions. And from that first step has come the motor truck express line which runs from a city out through the country, taking city merchandise to farmers and bringing the farmer's produce to the city.

It brings the city and the country close together. It saves the farmer's time. It lets him produce more. It brings that produce cheaply to the city man who has longed for real green corn during all the years he has been eating green field corn and popcorn.

It develops great country areas that are untapped by railroads. It is an added step beyond the rural mail route. And, most important from a commercial standpoint, it helps sell trucks and thereby increases the business of the automotive dealer.

Can you not see, years from now, great fleets of these trucks, operated by companies or by individuals, darting here and there about the country, taking the place of

the old country stage line but multiplying it a thousand fold?

When the movement gains momentum and becomes an accepted thing it will grow by itself. When such routes are established everywhere others will hasten to get into the business. Men with a little capital, seeking for a place to use it, will seek out sections into which they can operate rural motor express lines. These men will then seek out the dealer and ask for trucks.

But as the situation stands to-day the dealer must seek out the prospective rural motor expressman. The dealer must find where there is near his city a country section that can support a rural motor express. The dealer must then make the pioneering trips. He must prove that a route will pay. He must investigate and determine what charges must be made. He must lay out groups of routes. He must shape the thing up and turn it over to the operator.

Of course, the dealer may run the route himself if he so desires, but unless he cares for an extra business his best move is to get numerous companies started in the work.

With the routes go bureaus in the cities for the disposal of the farm produce after it is received. This work is often successfully handled by the local civic organizations, such as chambers of commerce.

The matter has been taken in hand by the National Motor Truck Committee of the N. A. C. C. at the request of the Highways Transport Committee of the Government. This committee, at 7 East 42d Street, New York, will give any interested dealer information as to how to start in this work. It will tell how to estimate charges, how to determine where the best routes lie and how to get express lines started.

This committee wants dealers to ask for this information, and on another page of this issue is a statement from the committee as to developments of the past week. Read that page and learn how rapidly the movement is progressing. With it goes the Return Loads Bureau idea, although it is entirely foreign to Rural Motor Express.

## Return Loads Bureau

**A** RETURN Loads Bureau is a central office in a city where trucks that are going to another city may find loads, so that trucks making a return trip may not have to travel empty.

The return loads proposition deals solely with inter-city freight. The

Rural Motor Express deals with lines that go from one city into the country and come back to the same city the same day.

Return Loads Bureaus are in operation in quite a number of cities now. They are doing good work. They are paying enterprises.

Truck merchandisers should devote some time to both these matters. They will be developing a movement that in the years to come will mean the sale of thousands of trucks without any salesmanship whatsoever. The pioneering will cost something, but the pioneer will be repaid.



# Is the Jobber Ever Unfair?

*Does He Create Competitors for His Dealers?  
—Has He a Moral Right to Do So?*

The letters appearing on this and the succeeding page are comments on the article that was published in last week's issue of MOTOR WORLD under the above title.

## Sells Only to Legitimate Dealers

Editor Motor World: I have your letter, together with the article which was to appear in Motor World of Aug. 14. As you say, we have very definite convictions along this line. Our policy is to sell only to the legitimate dealer, and while there is no doubt but that a considerable volume might be obtained by the jobber who will cater to other stores than the legitimate garageman and automobile dealer, this in our judgment is not only an injustice to those who have an investment in the trade, but is also an injustice to the car owner, for lack of ability to render service on items of automotive equipment which are sold by the dealer is a very severe handicap in our judgment to the owner, and when such concerns as drug stores, cigar stores, and the majority of hardware stores undertake to sell these items they are going beyond their depth.

Our personal experience would indicate that drug stores sell only flashlight items and items of similar character, with the possible exception of tires and tubes, which are now being stocked by some wholesale drug houses, and we believe it is from this source that they get their supply. We believe it is also from the same source that the cigar stores are obtaining flashlights, and this is the only line we have known any cigar stores to stock.

The writer made an investigation of the business of the hardware stores, and finds that their items are confined to about twelve, which are sold to the consumer "as is," and they are for the most part items which the car owner can install without the assistance of anyone having a knowledge of the method of attaching or of the use of the equipment, as, for instance, tire chains, jacks, flashlights, dry cells, spark plugs, dry cell lanterns, tires, tubes and articles of similar nature.

One of the publications which circulates exclusively to hardware stores made a statement some time ago that 85 per cent of their subscribers handled automobile equipment, but in the discussion it developed that the lines which were handled by the said 85 per cent were confined to the above. While this does interfere to some extent with the legitimate garageman's business and should not be encouraged by the legitimate automotive

equipment jobber, in our judgment it has not materially affected, and will not affect, the general business to any great extent.

We believe that in the large majority of instances any developments that may take place in any field of retailing will be due to negligence on the part of the garageman and automobile man to properly stock supplies, and in properly displaying them and merchandising them, and, as is stated in this article, it after all resolves itself into a matter of education.

There is no one who should have so great an interest in the discrimination of proper merchandising ideas as the jobber who caters to the regular trade in these lines, and they must take the responsibility for it.

Reilly of Callawassa should have a regular supply department, with a man in charge, whose business it should be to properly merchandise his stock.—R. M. McDONALD, Manager of Sales, The Gibson Co., Indianapolis.

## Thinks Tire Companies Responsible

Editor Motor World: I have your letter of the 12th inst. enclosing proof of your article entitled "Is The Jobber Ever Unfair?"

You bring out some very excellent points in this article, points that have given us a considerable amount of concern. Not that we have made it a point to try to establish drug stores, cigar shops, hardware stores, etc., in the automotive equipment business, but because we have noticed this tendency in a great many of the fair sized towns in our own territory and it did not augur well for the future of the garageman as an equipment dealer.

My own opinion is that the tire companies have had as much to do with this condition as anyone. We know for a fact that two or three of the well known manufacturers of tires, through their branches in this territory have made it a point where they could not get an automobile dealer or a garageman to handle their line to secure anyone in any line of business that they could get, provided the prospects had the financial ability to swing the proposition. In this way, they

## Letters from Readers

*THIS page is for the use of MOTOR WORLD readers with something to say. Letters on subjects of interest to dealers, garagemen, repairmen and jobbers are always welcome.—EDITOR.*

have very often gotten hold of live wires who may have been in the cigar business, or run a poolroom, or may have been in most any line of endeavor. The tire companies have doubtless felt that there are so many makes of tires on the market that it was pretty hard to find enough dealers to take agencies for all of the makes, and for that reason felt justified in taking somebody else out of another line of business. These tire agents naturally handled tire accessories and gradually drifted into the general supply line.

We believe, however, the cases where cigar stores and drug stores are handling accessories are comparatively few. The chief competitor of the garageman and the dealer, as far as equipment is concerned, is the retail hardware merchant. Both the hardware jobber and the hardware dealer have gradually squeezed into the business by picking off the plums; that is, by stocking certain well advertised, sure-selling articles and by displaying them attractively. Gradually, they have increased the number of these items, although we believe there are comparatively few retail hardware stores who carry as complete a line of accessories as the average store devoted exclusively to automobile supplies. They have not the knowledge or the inclination to carry such items as require knowledge of automobile construction or a reasonable knowledge as to the application of the several items of equipment. As a rule, these latter are the slow selling items, and do not interest them. They leave these for the garageman to handle.

Of course, it all gets back to merchandising methods, which your good paper has been endeavoring so strenuously to instill into the garagemen and dealers. The hardware man knows the value of good merchandising, knows how to cash in on the advertising of the manufacturer, and he knows how to display his goods to the best advantage. As a result of this, those hardware dealers who have gone in for accessories are skimming off the cream and will continue to do so until the retailers in our trade really wake up to the situation and begin to battle for their rights in a broad-visioned and intelligent sort of a way.

The automotive equipment business, as you state, rightfully belongs to those who are in the automotive business, whether they are dealers in cars, garagemen, repairmen or supply storekeepers, and it is our policy as a house to lend every effort to the support of the legiti-

mate trade. The hardware jobbers are certainly busy enough training the hardware dealers in the automobile accessory business, and it is certainly up to the automobile equipment jobbers to do their utmost to arouse the trade to the dangers that exist in their complacent acceptance of the present situation. The hardware retailer is certainly closer allied to the wholesale hardware house than he is to any accessory jobber, and sizing the situation up from a purely selfish standpoint, looking to his future volume of business, the automobile supply jobber cannot afford but to co-operate to the fullest extent in every effort to train the garagemen and the dealers in the proper handling of automotive equipment.—GEORGE B. SHEARER, President, Gaul, Derr & Shearer Co., Philadelphia.

### Should Help Develop Garagemen

Editor Motor World: I think you are going along the right path. However, I think you are giving the hardware people an awful lot of advertising and boosting them along when in reality the hardware people are advertising the fact that they soon will be the retail accessory people. Personally, I don't think this will ever happen, but I don't think we want to boost their game along any more than we can help. This applies especially to the paper that has made itself very strong with the automobile dealer, and we wouldn't think it would pay to boost the hardware man as a good accessory house.

Perhaps the jobber has been unfair, as you suggest, but nothing along this line, however, has come to my attention in the territory we travel. We do not find that the jobbers are opening up accounts in places they should not. We do find, however, that there is a tendency on the part of some of the larger manufacturers to open up business of this kind. I am going to give you the name of one manufacturer, that is the \_\_\_\_\_ Co. They cater to business from any place that merchandises goods. I am not saying this in the spirit of contention, but am simply stating their policy as I see it reflected. They are not, of course, alone in this matter, and I merely mention their name because they are well known and we both know them personally, and know their policy as well. I think you, and by "you" I mean the trade papers, the manufacturers and the dealers, want to help develop our repair and garage men. There has been a lot of development along this line, and there can be a lot more. I hear a lot of people say the garageman isn't much of a merchant, but nevertheless there are a great many mighty live garagemen. Theirs is a line of business that has only been established a few years, and the strides they have made put them on a par right now with the trades that have been in existence for years. Personally, I think the garageman ranks with the bigger men in his town—he has developed rapidly and may have overlooked some things, but he will have such things taken care of later on, and quickly too.

We are both of us familiar with the fact that Uncle Sam is educating a great many mechanics, and that the war is going to be the means of a more thorough knowledge of automobile repairing than ever. When the war is over and all of these fellows who have had a splendid education in repairing are back here, what is going to happen? We are going to have a million garages all competing where there ought to be a half million garages. The writer rather feels that is liable to be the situation, as every man who comes back will think he is a crackerjack and want to get in business for himself as soon as he can, and with motor transportation more thoroughly agreed to and acknowledged by the public as a secondary railroad system it is only natural that they will open up garages, that being the only business they know. Don't you think it would be a good policy for your people to think this over so as to have mapped out a good strong policy of education to cover a period of time when this situation does occur?—STANLEY ROBERTS, The Roberts-Toledo Auto Co., Toledo, Ohio.

### Big New York Dealer Pushing Automotive Equipment

THE Willys-Overland Co., which has a large salesroom on Broadway at Fiftieth Street, New York, has been pushing automotive equipment pretty hard. This equipment has been carried for some time by this dealer, but the salesroom was on the top floor and few knew about it, so not much effort was made along these lines. The things were kept merely as a convenience to car customers and that was all there was to it. Now the line is being given prominence with satisfactory results. This is how it is done: Two showcases have been installed in the large show window on Broadway, and these have been tastefully arranged with travelers' trunks, vacuum bottles, lenses, tools and other articles.

This is to catch the passerby and inform him that automotive equipment is for sale. No prices are marked on the articles.

This display is supplemented by mail campaigns. Each week some one article is given unusual prominence, and small photographs about 1 x 2 in. with gummed

backs are attached to all letters and invoices which go out of the store. Two of the stickers that were used to push the sale of dusters are reproduced here. The stickers are photographic prints and are made by John Brassington, Milwaukee, at a cost of \$10 per thousand.

Roy Peed, sales manager, says that the plan is meeting with considerable success. He says that at first buyers were wary, as they thought that any articles sold in the big marble-floor salesroom would of course have the price boosted over what the price-wreckers up the street would charge, but they found that the prices were exactly the same in most cases, and in some instances where the goods had been bought advantageously the prices were lower.

### It Can Be Done

BOSTON, MASS., Aug. 17.—A couple of weeks ago a man drifted into the salesrooms of one of the motor truck dealers in this city and stated that he wanted to take an order for a war book. The solicitor said that he had secured every other dealer and he wanted to make a 100 per cent record. The truck dealer remarked that the solicitor was in the wrong field, that he should be selling trucks.

"Give me a chance," the solicitor said. He was told to come the next morning. He showed up, but the truck dealer, who had not been in earnest, said he was too busy to see the solicitor. The latter called in the afternoon, the next morning, the next afternoon, etc., for three days, and his persistency won him a job at \$25 a week to start, with commission. Out he went and in one week he sold five trucks. He went into one big firm where he did not know who to see, but by skilful remarks learned the man's name and managed to get into his office. The man said he was busy, would be for an hour, and the solicitor said an hour was very valuable to him, too, and by dint of persuasive talk got the man to listen to him, and he put over a sale. The dealer is jubilant on his find, but is afraid some of the other dealers will get him away from him. And the trucks he sold are not cheap, being in the \$2,500 class. The man's commissions were several hundred dollars.

### Rubber Importations Limited

WASHINGTON, Aug. 16.—Importation of crude rubber has been limited to 16,666 tons for the months of August and September. This is proportionate to the rate tentatively fixed by the War Trade Board for the quarter ended July 31, 1918, which was at 100,000 tons per year. The rubber imports for August and September will be allocated by the Bureau of Imports along the general lines of the previous allocation, and with certain changes to take care of increased Government requirements.



*Photographic prints in the form of stickers were used to push the sale of dusters*

# The RETAIL NEWS

## SOUTHWEST

O. W. Burnett, Chillicothe, Mo., has opened a battery and supply station at 444 South Locust.

Henry Reldell, Hannibal, Mo., has taken over the management of the E. C. Long garage. The Long Co. has moved its headquarters to Quincy, Ill.

F. C. Helmer and T. E. Mortmeyer, Brunswick, Mo., have formed a partnership under the name of Helmer & Co. to operate a repairshop.

The Gates Half Sole Co. has opened an agency at Quincy, Ill., under the management of Frank Kathman, formerly with the U. S. Tire Co. here.

Davis Automobile Co., St. Louis, has taken on more territory for the Elcar. Sixty counties in Missouri and northern Arkansas have been added to its district. This makes the company the largest distributor of the Elcar.

The United Brokerage Co. has opened an office in the Pierce Building, St. Louis, to distribute Puncturene. C. A. Ten Eick is manager.

C. L. Jackson, Boner Springs, Kan., has bought the Golden Belt Garage.

P. N. Franzen, Downs, Kan., has bought the interest of L. L. Cornse in the Downs Tire Works.

Lloyd C. Tunnell, Waxahachie, Tex., has bought the battery department of the Central Texas Garage Co.

The Carlisle Motor Co., Waxahachie, Tex., is erecting a modern show room.

The Larned Motor Co., Larned, Kan., is the new name of the L. L. Parrish Motor Co.

The Peerless Princess Motor Car Co., Wichita, Kan., has opened for business at 210-212 West Douglas.

The Holton Battery & Tire Co., Holton, Kan., Herb Coffeen, proprietor, is now located in new quarters.

T. W. McFarland, Marion, Kan., has bought the Nelson-Newlin Tire Service from John S. Newlin and Carl R. Nelson.

E. and A. Hager, Belpre, Kan., have bought the Belpre Garage from H. Goodell.

Jay Toal, Cedarville, Kan., has bought J. P. Tabler's interest in the Star Garage.

The Western Motor Co., Pryor, Okla., has occupied a branch here.

C. A. Payne and H. E. Bowers, Covington, Okla., have bought the Covington Garage from Nichols & Brink.

E. S. Hutchinson, Tulsa, Okla., recently suffered a loss of \$1200 when the garage burned.

Jackson & Swindle, Stratford, Okla., have bought the garage of John Edwards.

M. E. Billingslee, Miami, Okla., has bought the City Garage.

The Weleetka Garage & Transfer Co., Weleetka, Okla., has been dissolved by mutual agreement.

C. L. Brown, Wetumka, Okla., has bought the interest of Odle Vaughan in the Ford Service Station.

The College Hill Garage, Wichita, Kan., has moved into its new building at Douglas and Hillaide.

David Curtis, Liberal, Kan., has bought a half interest of Charles Molter in the Overland Garage.

R. G. Johnson, Concordia, Kan., has opened an automobile business.

G. V. Hanna, Pittsburg, Kan., has bought the interest of T. A. Ledford in the T. & L. Motor Car Co.

Long & Fisdell, Harrisburg, Kan., recently succeeded the garage firm of Long Bros.

The Wolfley Automobile Co., Kansas City, Mo., has opened a branch at 1809-11 McGee.

The Caruthersville Steam Vulcanizing Co., Caruthersville, Mo., has consolidated with the Cryslor Motor Co.

Ben Seyster and Charley Harmon, Parnell, Mo., have bought the Nye & Logan Garage.

P. O. Bailey, West Plains, Mo., has bought the O. K. Garage from Earle Woodrel.

J. Samuel Stone, Kingston, Mo., has bought the A. L. Houghton Garage.

J. S. Rankin, Holden, Mo., recently lost his garage by fire.

The Mid-Company Super-Service Tire Co., Kansas City, composed of Orville C. Van Noy and Fred Smith, formerly of the Haynes Motor Co., have leased the entire building at 2610 McGee.

The Auto Sales Co., Little Rock, Ark., distributors for Stearns-Knight and Studebaker passenger cars and Sandow trucks, will move to larger quarters. They will occupy the location at 304 Center Street.

## New Garages

H. C. Simpson .....Salina, Kan.  
L. C. Price .....Larned, Kan.  
Singer & Nicholson .....Oskaloosa, Kan.  
F. C. & Wm. Davidson.....Quenemo, Kan.  
W. A. Matteson.....Ablene, Kan.  
E. M. Hall .....Howard, Kan.  
Rank & Cotton .....Weatherford, Okla.  
M. L. Harris .....Blackwell, Okla.  
Jones & Martin .....Comanche, Okla.  
Geo. Brandsteetera .....Dalhart, Tex.  
Hugh Kenningham .....Waxahachie, Tex.  
E. H. Robinson .....Huntsville, Tex.  
Albert Neef .....Texarkana, Ark.  
O. H. Tilley (50x80).....Marysville, Kan.

## PACIFIC COAST.

E. Lindstrom, of the Storage Battery Service Co. of Monrovia, Cal., has equipped his place with a full stock of tires and added vulcanizing to his establishment.

G. R. Chaffin and V. Hannon have opened the new tire store at 1500 West 7th street, Los Angeles.

Ahrens & Ahrens, Spokane, distributors of Stephens cars in the Inland Empire, have opened a service station at 1523 W. First Avenue, where a garage for storage and a salesroom for used cars will be operated.

Oregon Motor Car Co., Portland, supplier of Lalley farm lighting systems, is opening headquarters for Eastern Washington and Oregon at Walla Walla and at Spokane, Wash.

The Parker Garage, 1511 Broadway, Seattle, was damaged to the extent of \$10,000 by recent fire resulting from spontaneous combustion of oil.

Eastman Motor Co., Spokane, has sold its stock and business to the Sunset Motor Co. of Seattle. The new owners will establish

a branch office in Spokane at W1212 First avenue.

The Bearings Service Co., Portland, D. B. Bevier, Western district manager, will add a new rim service to its line.

Jack Wall, First and Lenor streets, Seattle, has sold his repair and garage business at 413 Seventh avenue South, and will construct a new garage. The structure will be two stories, 110x120.

J. A. Merritt has taken over the Cash Garage at Covina, Cal.

The Bay Cities Garage of Santa Monica, Bryant & Evans, former proprietors, is now managed by J. H. Furlow, Hupmobile and Buick dealer of that city.

## New Garages

W. G. Norris (113x112, cost \$12,000)...Seattle

## NORTHWEST

G. E. Weldman has opened a tire repairshop at Plattsmouth, Neb.

V. I. Mayfield, Omaha, Neb., is building an addition to his tire repairshop, 45x50.

E. C. Brown has bought the garage of the Oldsmobile Co. of Nebraska City, who are moving to Lincoln, Neb.

The Standard Vulcanizing Co., Winterset, Iowa, has been sold to John Young and Frank Eggleston.

Thomas Hannah, Fairfield, Iowa, has bought the interest of his partner in the Hannah-Clinkenbeard Auto Co.

Fred Smith, Toledo, Iowa, has closed his garage to enter the army.

Luther Bailey, Correctionville, Iowa, has brought the garage from Hugh Wright.

Hurley & Connell, Iowa City, have bought the Hogan Brothers Garage.

Peter J. Glynn, Aurelia, Iowa, has sold his interest in the Flynn-Treinnen Auto Co. to his partner.

The Hawkey Tire Co., Des Moines, will open a branch sales office at Atlantic, Iowa.

H. O. Hanson, Iowa Falls, Iowa, has bought the garage at Popejoy, Iowa.

W. T. Robbins & Sons, Traer, Iowa, will operate the Kostian Garage.

H. J. Hickey, Ft. Dodge, Iowa, has enlisted in the army and closed his Marmon and Maxwell salesrooms.

Lewis Levang, Fertile, Iowa, has closed his garage and joined the colors.

Fred Schneckepper and Tom Wilson, Holstein, Iowa, will operate the Hawkeye Garage, the former owners having enlisted.

T. P. Carnall, Oelwein, Iowa, has bought the Oelwein Garage.

J. O. Wilken, Atlantic, Iowa, has bought the Cass County Auto Co. from A. W. Kewley.

The DeJarnette Auto Co., Cherokee, Iowa, has leased the Noonan Garage for their Dodge agency salesrooms.

J. J. Savage, Sharpsburg, Iowa, has traded his garage to M. E. Leverton of New Market, Iowa.

The Huntington Garage, Estherville, Iowa, was damaged by fire.

## New Garages

Al Stader & Sons.....Ankeny, Iowa  
Adolph Paul .....Atlantic, Iowa  
Elliott Rubber Co.....Elliott, Iowa  
Maze Bros. (addition, 25x80)...Auburn, Neb.  
Tegelberg Auto Co. (70x122)...Ashland, Neb.

## EAST

Pettingell-Andrews Co., 100 Brookline avenue, Boston, has been appointed New England distributor for the Automatic Extension Reel.

T. Tyler Boggs, 205 Abbott Bldg., Philadelphia, Pa., has been appointed distributor

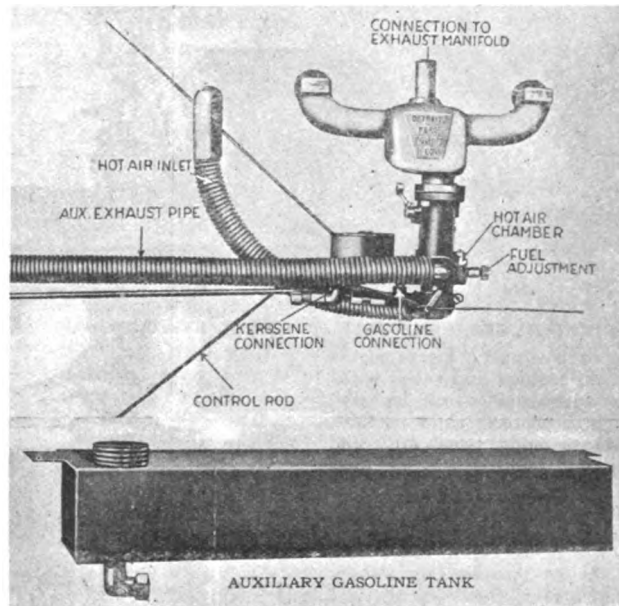




# Automotive Equipment

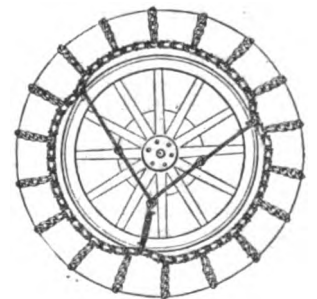
## KEROSENE EQUIPMENT FOR FORDS

Kerosene equipment for vaporizing kerosene on Ford cars and tractors consists of a special manifold and carbureter and some changes in the existing exhaust pipe, control rod and choke wire. An auxiliary gasoline tank is also provided for starting. The kerosene is first atomized, then vaporized and finally dried before entering the cylinders. A preheater which surrounds the fuel inlet lifts the kerosene without vaporizing it, and a venturi causes an eddy action, atomizing it. Heat is then applied to vaporize it and it goes to the drying chamber. Change from gasoline to kerosene is made from the dash and four notches of adjustment are provided on the needle valve. The regular Ford tank becomes the kerosene tank. Price \$30.—Kerosene Equipment Co., Detroit.



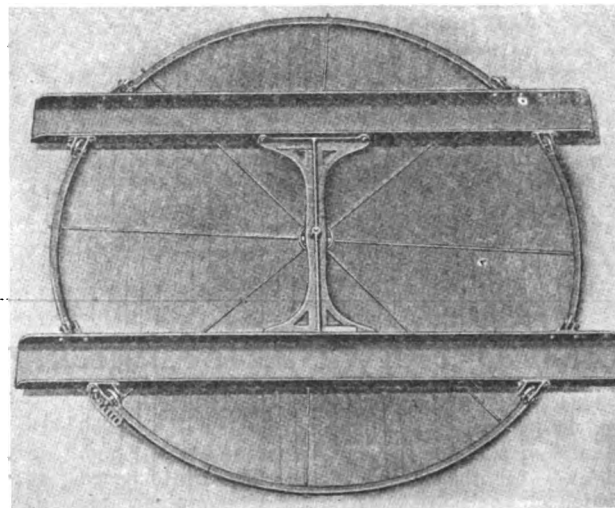
## SUPERIOR SKID-CHAIN ADJUSTER

A combination of two two-piece rods and a coil spring, one end of each of the rods and the other end of the spring being hooked into the side chain at equidistant points. This keeps the chains under tension, yet allows them to creep on the tire. Made in three sizes for passenger cars and three sizes for trucks. Price 50 cents per set for two wheels for passenger cars and \$1 per set for two wheels for trucks.—Specialty Mfg. Co., 637 Massachusetts Avenue, Arlington, Mass.



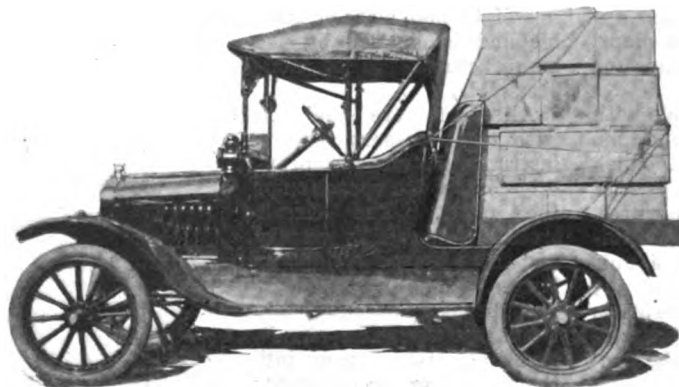
## ZIP TUBE PATCH

This 2-min. tube patch is self vulcanizing and is made of high grade elastic rubber without fabric. Claimed to stay in position and give with the tube. Applied by abraiding the place to be repaired, applying cement and pressing on a piece of the patch. Complete outfit contains tube of cement, roll of patching material and buffing material. Small size 50 cents, medium size \$1, large size \$1.50.—4-A Products Co., Charles Building, Denver.



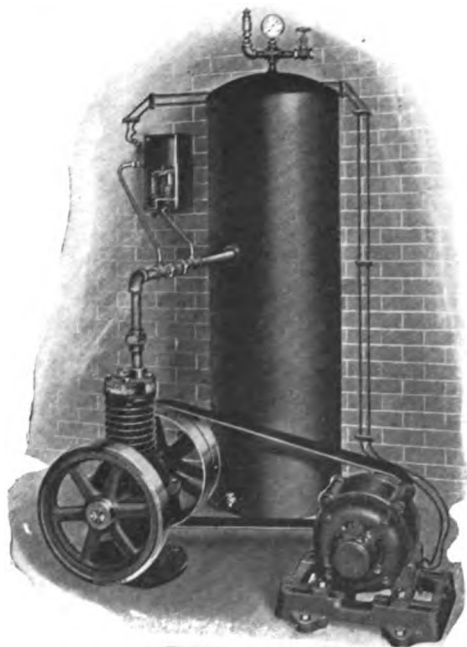
## UTILITY DISAPPEARING TRUCK BODY FOR FORDS

A disappearing truck body to be attached to a Ford roadster, the body capable of being changed from a roadster to a truck or vice versa in a few seconds. When used as a roadster no signs of the commercial body are visible, and when used as a truck the capacity is  $\frac{1}{2}$  ton. The turtle back of the roadster hinges up and the sides of the truck body are pulled out. Made of heavy gage steel and enameled to match the rest of the Ford. Price \$32.50.—Hill Pump Valve Co., Archer Avenue, Canal & Twenty-third Street, Chicago.



## PITLESS AUTOMOBILE TURN-TABLE

Pitless automobile turn-tables operate on circular tracks mounted on top of the floor. The turn-tables themselves have two runways of steel 18 in. wide, mounted on 7-in. ball-bearing wheels, and clear the track  $\frac{3}{4}$  in. The track may be mounted on a wooden floor, or the rails may be bedded in a concrete floor. Hence it is not necessary to cut a pit in the floor. Made in three types, No. 1 for cars with wheel bases of not over 118 in., price \$120; No. 2 is for cars with wheel bases not over 144 in., price \$130; No. 3 is a special for Ford cars or other cars with the wheel base not over 110 in., price \$45.—Service Auto Equipment Corp., Nineteenth and Campbell Streets, Kansas City, Mo.



**MAYO MODEL 8-C FREE AIR OUTFIT**

An automatic air outfit which maintains air in the reservoir at a pressure of 125-150 lb. at all times. An automatic electric switch starts the motor driving the pump when the pressure drops below 125 lb. and cuts off the current when it reaches 150 lb. Adjustments can be made to vary these pressures after the outfit is installed. The tank is 16 x 48 in. and can be pumped from empty to 125 lb. in 11 min. and from 125 to 150 lb. in 3 min. When the current is cut off, the air is exhausted from the pipe so that the compressor starts idle. Outfit includes tank, air compressor, automatic switch, needle valve and all fittings between compressor and tank. Price \$130. Leather belt, 2-hp. motor and electric wiring extra. —Mayo-Skinner Mfg. Co., 2115 Elston Avenue, Chicago.

**FIXIT RUBBER PUTTY**

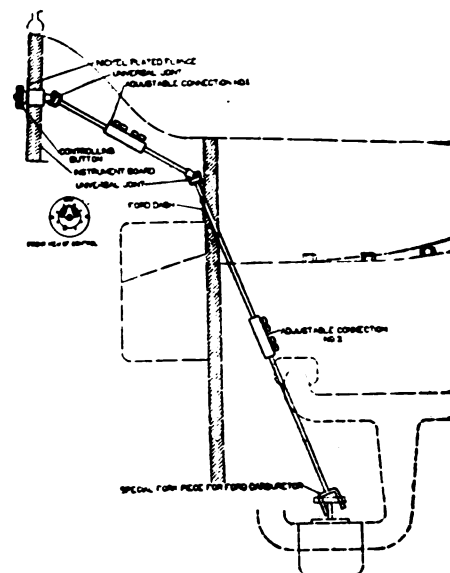
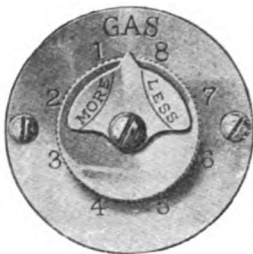
A rubber putty for repairing injured casings and tubes without vulcanizing. Can be used on cuts, blisters, sand pockets, blowouts, solid tires, etc., and does not require heat or tools for its application. Outfit consists of a can of cement, a can of putty and directions for use. Small size, 50 cents; large size, \$1.—J. P. Gorman Co., 380-384 Canal Street, New York City.

**FIVE-MINUTE VULCANIZER PATCHES**

A tube patch combined with a tin receptacle containing fuel, the whole intended to be placed in a vulcanizer or clamp to repair a hole in a tube. The process takes exactly 5 min. Packed 1 doz. in a cardboard box. Price \$1.—Five-Minute Vulcanizer Patch Co., 301 West Fifty-third Street, New York City.

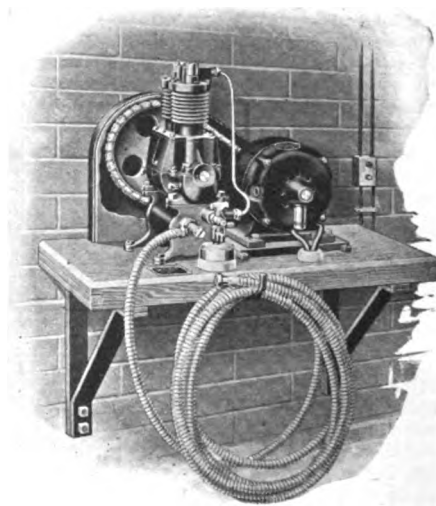
### INSTRUMENT - BOARD EXTENSION FOR FORD CARBURETER CONTROL

An extension for the Ford carbureter control so that it can be operated from the instrument board. A combination knob and indicator extend outward from an indexed dial and the knob connects with the regular dash control by means of a rod and two universal joints. Knob and plate are nickel plated. Price \$1.75.—Standard Thermometer Co., 65 Shirley Street, Boston.



**MAYO STATIONARY GARAGE PUMP**

A stationary wall outfit with two-cylinder pump and ¼-hp. motor. The pump is chain driven and a neutral air chamber between the pump and the tire outlet prevents burning out the motor. The whole outfit is mounted on a heavy wall bracket and 25 ft. of armored hose go with the outfit. Price with 110 or 220 volt A C or D C motor, \$95. Other motors specially priced. —Mayo-Skinner Mfg. Co., 2115 Elston Avenue, Chicago.



## Universal Battery Farm Lighting Plant

**T**he Universal Battery Co., 3410-3424 South La Salle Street, Chicago, is making farm lighting and power plants in a number of different sizes and capacities ranging from the smallest, which will operate fifteen 15-watt lamps for a period of 8 hours and consuming approximately 2 hp., to the largest plant, which will operate 190 15-watt lamps for 8 hours and consume about 8 hp.

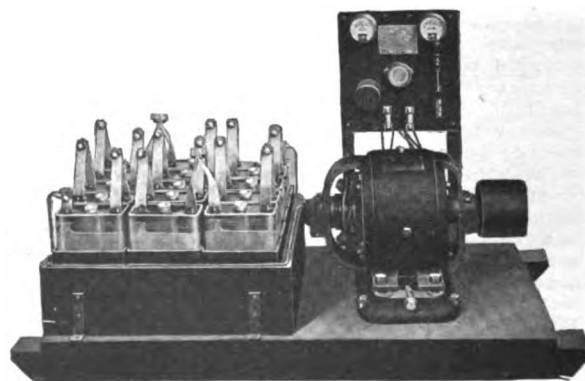
The plants are furnished complete with the exception of the engine, and the plant can be belted to any engine which may be in use on the farm or a special engine may be procured for the purpose.

The battery is in sealed glass individual 2-volt cells. Each cell is a unit by itself and can be removed and the plant will not be rendered inoperative. The plates are of the pasted type, although other types of plates can be provided.

The generator is of the 4-pole shunt-wound type. The normal speed is 1800 r.p.m. for the small plant and 1200 r.p.m. for the larger plant. The switchboard panels are constructed of ebony-asbestos wood, which is fireproof. It is also lighter in weight than slate or marble and is claimed by the manufacturers to be non-breakable.

All parts are equipped with the necessary meters, instruments, etc., to properly control the operation of the plant. The circuit breaker is opened by gravity and there are no springs or hinges. The reverse-current breaker automatically closes the charging circuit, throwing the battery into the line when the generator

reaches a specific voltage. It breaks the charging circuit, throwing the battery out of line when the generator pressure has dropped to normal battery voltage. An ampere-hour meter shows the condition of the battery.



# Arrowline Latest in Westcott Family

*Has Lines Like an Arrow, Hence Its Name—Continental Motor Used*

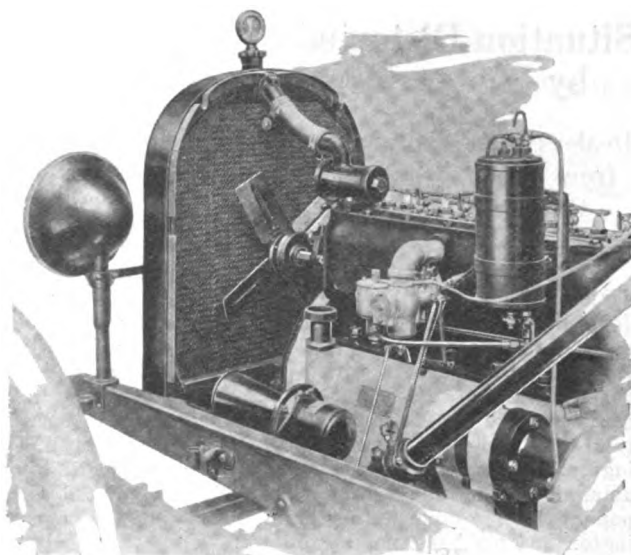
A NEW seven-passenger model, known as the Arrowline Seven, will be made by the Westcott Motor Car Co., Springfield, Ohio. The price is \$2,490. The body is of characteristic straight line design. The top line of the hood and cowl, from the radiator to the instrument board, is perfectly straight, and there is another straight line extending from the top line of the doors through to the radiator. The doors have sharp, square corners at top and bottom. The door handles are of T design, with inside release, and the bumpers are of diamond bar shape.

This body is mounted on the standard Westcott six-cylinder chassis, with a wheelbase of 125 in. Cantilever springs are used at the rear, which combination permits of the use of a long body. The seats are pitched at an angle for comfortable riding, and the upholstery is very soft and deep. There is plenty of foot room for all of the seven passengers.

The front seat of the car is undivided, thus affording space for an additional passenger in an emergency. Between the disappearing seats in the rear is a small compartment for personal effects, which are secured against theft by a Yale lock, controlled by the same key which is used for ignition. Above this compartment swings a robe rail of leather. Tonneau and cabinet are illuminated by a small electric light. The instrument board is of walnut, and an unusual item of equipment is an electric signal lighter with extension cords.

The new Westcott is equipped with the Continental 9N engine,  $3\frac{1}{2} \times 5\frac{1}{2}$ . The

*In the Continental Model 9N the carburetor is opposite the valve side and a thermostat rides atop the motor*

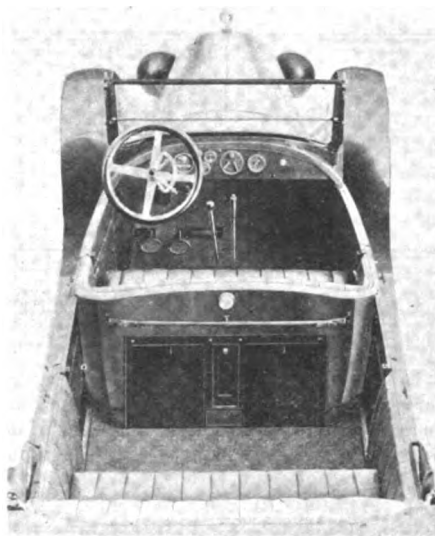


intake gases are compelled to pass over a heated plate to insure thorough vaporization and complete combustion. A three-bearing crankshaft with balance weights is used. It is a drop forging, heat-treated to a tensile strength of 90,-

000 lbs. per square inch. The crankshaft is supported in nickel babbitt bearings backed with bronze. Helically cut timing gears are used. The center gear is made of compressed silk fiber, which eliminates metal to metal contact in the gears and insures noiseless operation at all speeds.

Aluminum is the material used in the crankcase. All of the crankshaft bearings are supported from the upper half of the case, and can be easily reached by removing the oil pan. All valves are enclosed, and the valve stems are hardened to minimize wear. Piston and cylinders are made of the same grade of gray iron, which tends toward uniform expansion and contraction. I beam section connecting rods are used, made of 35-point carbon steel. The cams are forged integral with the camshaft. Water circulation is effected by means of a centrifugal pump, and lubrication of the engine is by a combination splash and force system.

Standard parts are used throughout the chassis, including the Delco starting, lighting and ignition system, the Rayfield carburetor, Gemmer steering gear, Fedders radiator as well as oil cup lubrication, self-acting top and thermostatic control of the temperature.

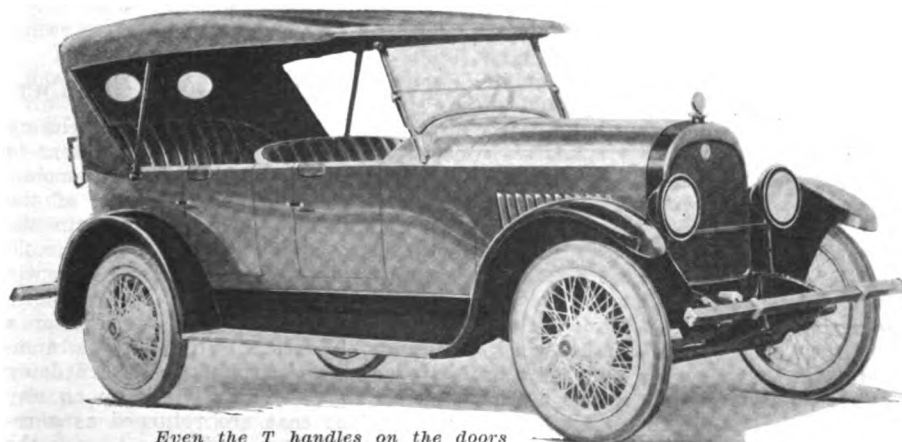


*Between the disappearing seats is a Yale-locked safety deposit box*

## Ask Federal Appropriation for Road Maintenance

PHILADELPHIA, Aug. 19—A plea that the Rotary Clubs in the Middle Atlantic States combine to obtain adequate federal and state appropriations and provide efficient administration in building and maintaining public roads was made by E. J. Berlet, president of the Stability Motors Co., speaking at a meeting of the Rotary Club here.

More than a quarter of a million motor trucks, asserted Mr. Berlet, now are in service in the United States, marking the end of the short-line railroad. In hauls of less than 100 miles, he said, the motor truck is competing on even better terms than the railroad, and what is needed to widen the zone is the completion of hard-surface roads capable of supporting 10-ton motor trucks.



*Even the T handles on the doors help out in giving the Arrowline its effect*

## Situation Distorted by Boston Newspapers

**Dealers Are Indignant at Story  
from Washington and Will Send  
Out Their Own Trade Story**

BOSTON, Aug. 17—The Boston motor dealers, John H. MacAlman, John H. Johnson and George B. Kimball, representing the Boston Automobile Dealers' Association, came back with a more optimistic view of the motor situation as far as future production was concerned than they had when they went to Washington. On their return they were amazed to find in one of the Boston papers this morning a story from Washington had big headlines as follows:

PLEASURE  
CAR MAKING  
WILL STOP  
Appeal from Auto  
Dealers Fails to  
Change Rule.

This story was an interview with Edwin B. Parker, in which he was reported as making comparisons between this country and Europe, etc., and when the dealers here read it many of them felt sick at heart. In the other papers were stories entirely different, but not having the big headlines they were not as prominent.

When the committee returned and read the story they were amazed, first that Parker should be so quoted, and again at the way the story was headed up. They were kept busy answering telephone calls trying to explain the situation. Now they propose to have the association send out to all the dealers a statement to try to counteract the effect of what was published, and with most of the dealers in the National Automobile Dealers' Association all the men in the business of any prominence in New England will get the correct version of the view taken of the industry by the War Industries Board.

### Kansas City's Letter to War Board

(Continued from page 9)

and that would mean a serious deflection in real estate values, for most of the automobile sales rooms here have been built especially for that purpose and in a district that could not be converted into other lines of business.

"Kansas City's high position in bank clearings has been greatly accelerated by the motor car business. Motor cars last summer saved the business interests by taking the place of street cars during a serious strike and we wish seriously to impress upon your honorable Board the fact that in this locality we have very few *pleasure* cars but most automobiles here are used for the carrying on of everyday business life.

"We ask, therefore, that thorough investigation as to the results of such curtailment be made in this and other communities and that you weigh carefully the far reaching results against the necessity of such action.—Signed by:

"A. E. Hutchings, president, Automobile Club of Kansas City;

"H. H. Daniels, president, Chamber of Commerce, Kansas City, Kansas;

"K. C. Mo. Fire Ins. Agts. Assn., per Jas. Wallace;

"Herbert V. Jones;

"Optimist Club, S. M. Healey, president;

"Leo Crabbs, president Graphic Arts Assn.;

"A. Penn Denton, president Jovian Electric Club.

"W. H. Grant, vice-president, K. C. Implement Vehicle & Hdw. Club.;

"F. D. Rose, president, K. C. Credit Mens' Assn.;

"Wm. B. Tuteur, president, Motion Picture Exhibitors Assn.;

"W. T. Grant, vice-president, Chamber of Commerce;

"H. C. Balsiger, president, K. C. Retail Grocers' Assn.;

"S. J. Whitmore, president, Festival Assn.;

"Robert S. Beard, secretary-treasurer, K. C. Engineers Club;

"W. T. Longshore, president, School Masters' Club;

"Walter S. Mars, president, K. C. Hotel Keepers' Assn."

## N. A. D. A. NEWS

### Conservation Situation Still Tangled

In their effort to untangle the conservation situation at Washington the dealers had little success. Their original war service plans were worked out at the request of what is now the Conservation Division of the War Industries Board, and it went well until the oil companies refused to co-operate in Sunday closing.

Friday President Vesper and the War Service Committee appealed to Copland of the Conservation Division, but his only reply was that he had nothing to do with the Oil Division. Furthermore, he did not seem at all inclined to take up the matter with the fuel section of the board, and even stated he would be glad to have the dealers go to the board "over his head."

Just why the head of the Conservation Division, who is a member of the War Board, should decline to take the matter up with the oil man, who is a member of the same board, cannot be understood by the dealers, so they will try to untangle it without the assistance of the head of the Conservation Division which, in a way, is to blame for their getting into the war service work in the beginning.

Meantime the dealers are going ahead with their conservation work despite the opposition of the big oil companies.

## Dealers Must Play Fair, Says N. A. D. A.

**Cars in Transit Must Live Up to  
Status Obtained by Association  
Else They Get No Redress**

ST. LOUIS, Aug. 19—The N. A. D. A. headquarters, which has, among other things, been fighting for a reasonable status of the cars being driven in transit as to license plates, now has another undertaking along the same line. This is to educate dealers to conform with what has been decided to be a reasonable status of the in transit car.

The last three "arrest outrages" reported to the N. A. D. A. office have concerned the drive-aways of small groups of cars, say one, two or three cars. In none of the cases did any of the cars carry a license plate. They merely were marked in transit, except in one case, where the number of the dealers' plates were reproduced on a cardboard. In none of the cases was there positive evidence present that the dealer had supplied himself with dealers' licenses.

No protests were made in these cases. The rule for which the N. A. D. A. has been fighting is that the first car shall carry on the front a dealer's license plate and the duplicate plate shall be carried on the rear of the last car, and that all cars shall travel in a line as reasonably close as traffic permits.

Another case was reported where a Missouri judge fined a man returning with a stolen Hudson car. Protest was made that the owner had a license for this car and the number was given. Assistant Secretary Holke took up this case with the secretary of state. It developed that the license issued was for a Hupmobile, and was issued to the man whose Hudson was stolen. The state records had no record of this man owning a Hudson. On the face it appears that the man was using one license for two cars. The dealer who was aiding in recovery of the car and who supplied the chauffeur who was in charge when arrested has withdrawn his protest, and it remains to be seen whether the state will look further into the case. If so, it appears that the car owner is in for an uncomfortable time.

### Every Member Get a Member

Editor Motor World: I am enclosing a copy of a letter that is being sent to all members of the National Automobile Dealers' Association. The text of the letter, I believe, will fully explain the situation. This is going to all of our old members as well as to those recently brought into the association.

We are enclosing with each letter a circular, "Reasons Why," and a numbered application blank. We are doing this so that we may check up on any applications that are returned as a result of this letter, and mean to give the ones who do the work due credit.

We believe this is a time when every-



## Got 65 Members



J. F. MARTIN

Manager of the Kansas City Buick branch, who has through personal effort given the N. A. D. A. 65 members

body should put their shoulders to the wheel. Not everybody can take the time to attend committee meetings in Washington and do other work along that line, but there is not a member of the association who cannot get out and secure one additional member if he will simply give it the necessary time. While this would mean small effort to him, the total result would be a great big thing for the national association, and the part of each member, though requiring little effort, is nevertheless most important.—National Automobile Dealers' Association, by E. E. Peake, Executive Secretary, Kansas City.

## To All N. A. D. A. Members

You as a member of the National Automobile Dealers' Association appreciate the necessity of a powerful national organization. You know the need for an aggressive fighting force to safeguard the automobile dealer from unfairness.

The American business man simply must be on his toes in these critical times if he is to survive the flood, and survive we must, for the good of the nation as well as for our own self protection. In the next few months we must not only "hit the ball," but must also "run the bases." A few of us have been putting in all of our time in this work, but we know there are many others ready and willing to help if given an opportunity.

Merely being a member of the national association is not all. There is a duty, a certain obligation, attached to membership in this organization. You must give some time and effort to help us succeed in the work we are doing. There is one way you can help right now

—and it will be help of consequence—and that is to

**GET ONE NEW MEMBER FOR THE ORGANIZATION!**

Our most important business just now is recruiting the national organization to a strength that will make it the power it should be. If every member does this little thing for the national association the total result will be a big achievement, and with that strength we will be a power to reckon with.

And the most important part of all is to get this member NOW, not tomorrow or the next day, but TO-DAY.

Enclosed find a numbered application blank and a circular showing why dealers should be members of the national association. Wide publicity will be given members who send in another member for the organization. This is a small request and personally I sincerely hope you will do your part. So many others are doing more than their share.

Recent happenings in Washington prove conclusively that quick action is imperative on the part of the dealers to save the business from destruction.—F. W. A. Vesper, President.

## 460 Members Last Week

ST. LOUIS, Aug. 19—A new feature entered the N. A. D. A. membership campaign last week, when applications began to pour in through the work of the territorial committees appointed as a result of the plans laid at the Chicago meeting. The result was 460 memberships, distributed as follows:

Chicago Territory Committee.....	250
Minneapolis Committee .....	40
New York Committee.....	50
Pittsburgh Committee .....	40
Individual applications .....	80
Total .....	460

During last week neither President Vesper nor Executive Secretary Peake was working on memberships, hence the record is excellent. Several weeks' good run is expected, as these committees stated that this was only the first response and that others would follow. A number of other cities have completed the naming of territorial committees, and these should get to work soon.

## More Conservation Trouble

CINCINNATI, Aug. 17—Differences which have been developed at Washington over conservative plans for the automobile trade were discussed by the Cincinnati Automotive Trade Association.

Although Fuel Administrator Garfield has declared Sunday closing of garages was unauthorized, representatives of automobile dealers assert it has the approval of the Conservation Division, which seeks to conserve man power. The Fuel Administrator's statement followed appeals made by a minority of oil companies opposed to closing their stations unless compelled to do so, it is said.

## Martin Alone Gets 65 N.A.D.A. Members

**Concentrates on Effort Because He Believes in Cause and Makes Record for Individual Support**

ST. LOUIS, Aug. 19—J. F. Martin, of Kansas City, holds the honor of having sent more memberships to the National Automobile Dealers' Association than any other unattached volunteer worker.

The books at N. A. D. A. headquarters show 65 memberships credited to Martin as having been relayed from his office. Martin, in response to an inquiry, says that the record in his office shows letters from 18 dealers who state that they have become members through Martin's efforts, but that they sent their applications direct to St. Louis or Milwaukee.

Still another 18 dealers on Martin's lists report that they are members of the N. A. D. A., without stating as to how they joined. That is a total of 101 members due to Martin's personal campaign.

There are a number of other men whose records now equal or exceed that of Martin, but his work was done before there was a membership campaign and he has never been named on any committee, but did his work in response to a general appeal. His work was done through his office much as any distributor can do.

In a letter to N. A. D. A. headquarters he says: "The only secret to putting over a deal of this kind is by pushing the proposition vigorously, and, just like winning success in any undertaking, it is a case of using good, common sense and lots of energy."

"I sent out two trade letters and immediately received a number of responses. I then instructed our ten traveling men to get busy rounding up those dealers who had not already joined. It got to be a sort of a competitive proposition among our road men whereby each was trying to clean up his territory first, and so our travelers rendered much assistance in this campaign, and, when talking the situation over in a certain town with the Buick dealer, they did not stop with him but went to other dealers and secured some applications."

During a recent visit to St. Louis Mr. Martin really explained the whole secret of his effort. He said to Assistant Secretary Holke:

"The N. A. D. A. proposition appealed to me early in the war situation. I thought I saw that there would be need of some one to look after the interests of the motor car dealer, as they became involved in the war affairs. I could see no other proposition that looked as good as the N. A. D. A., so I joined, and, wanting it to be as powerful as possible, I sought to get every other dealer I could to join, for in numbers there is strength."

"In a measure my objective was selfish, as I wished to protect my own business, but I also wanted to aid and protect the

business as a whole. Had I thought that the N. A. D. A. would ask special favors for the motor car dealers during the war or, in any way, bring pressure to bear that we be allowed to shirk, I would not have joined.

"I think that already I have the worth of my money and effort in the dignified, patriotic effort the N. A. D. A. has made to protect the motor car dealers from injustice and at the same time offer on the part of motor car dealers their full share of patriotic service.

"Any man who has not joined should do so at once, because he already has benefited many times the cost of a membership and we are only at the beginning."

Martin is manager of the Kansas City branch of the Buick Motor Co.

### Oil Trouble Dying

ST. LOUIS, Aug. 19—The oil situation, which two weeks ago threatened the entire war service structure of the N. A. D. A., has spent itself without serious damage beyond one open Sunday in many communities. Here in St. Louis and some other cities there was not a break due to the announcement from Washington that the assumption of regulatory powers on the part of the various automobile association committees was without authority.

Much of the stilling of the tempest was due to the later discovery that newspaper correspondents in Washington sent out only one of three paragraphs of the announcement of the Fuel Administration. The last paragraph really was the vital one, as it stated that the outbreak of the Fuel Administration was not to be construed as meaning that the work of the Automobile Committee could be undone.

This provision, when it finally reached the oil dealers, apparently had more effect than the efforts of the automobile committees and late word from cities where oil companies were proving to be stubborn is that most of them are closed.

President Vesper, of the N. A. D. A., who went to Washington last week to appear before the War Industries Committee to ask that the motor car dealers be given a chance to exist, said before he left that he "would stay in Washington until the power to enforce war service regulations over oil stations had been threshed out."

It will be President Vesper's effort to co-ordinate the work of the Fuel Administration, Gasoline Committee and Petroleum Committee and Automobile Dealers' Committee. It is no secret that there has been conflict between these various powers—jealousy perhaps—and President Vesper will stand strongly on the ground that the gas stations are more intimately connected with the motor car trade than with any other industry. He also will be prepared to show that unless the Automobile Committee is given power to handle the situation the Petroleum Committee will lose its greatest aid in a conservation program. Word has come that Vesper will see G. C. Winningham, chairman of the Gasoline Section, during his visit in Washington.

## N.A.D.A. to Set Up Washington Office

### Will Have Manager Permanently in Charge—To Establish Publicity Bureau

The National Automobile Dealers' Association is to open an office in Washington with a permanent manager for the period of the war.

This action was authorized last week Friday at a meeting of the directors in Washington, after the hearing before the War Industries Board.

It was also left with President Vesper to move the headquarters from Milwaukee to St. Louis, Vesper's home town. Much of the work has been done in St. Louis for some time, but theoretically the headquarters have been in Milwaukee.

The membership of garagemen was discussed, and it was found the matter would have to be settled at the annual meeting next winter by a vote to change the constitution and by-laws.

The directors considered the establishment of a publicity bureau to provide for the sending to daily newspapers of news of the activities of the organization. It is held that such a bureau might have done much to combat the many damaging rumors that have been prevalent for a year or more.

### Boston Sends Delegation

BOSTON, MASS., Aug. 15—In order to try to impress upon members of the War Industries Board that its proposed plan to stop production of passenger cars entirely after Jan. 1 next would mean bankruptcy for hundreds of dealers in New England the Boston Automobile Dealers' Association named a committee to go to Washington to state their case Friday.

John H. MacAlman, president of the Boston Automobile Dealers' Association, who is also vice-president of the National Automobile Dealers' Association, headed the committee. With him went John H. Johnson, who is a director of the two associations, and George H. Kimball of the Henley-Kimball Company.

Mr. Kimball had charge of the last Liberty Loan drive for the motorists here, and he raised close to \$1,000,000 through the efforts of a committee of dealers. He went to tell the committee what had been accomplished in Liberty Loan, Red Cross, Y. M. C. A., K. of C. and every other kind of demand made upon the dealers. Mr. Johnson has just finished work in getting some 500 members into the N. A. D. A. in New England and he is to give the committee some facts about the wealth represented by these men. President MacAlman plans to explain the ramifications of the industry and what it represents. All three men expect to get in touch with Senators John W. Weeks and Henry Cabot Lodge, and also some of the members of the congress, to aid them in the fight. Sen-

ator Weeks has always been very friendly toward the motor industry, and he has pledged his aid time and again to helping it both at Washington and also in Massachusetts.

### Standardized Truck Wins

WASHINGTON, Aug. 20—The Motor Transport Committee, which has complete charge of motor vehicles for the army, has been completely overhauled and certain reorganizations made as a result of a general order to-day. Captain C. B. Drake has been placed in complete charge and has been promoted to Brigadier General. James F. Furlow has been made a colonel and is under General Drake. The Motor Transport Committee is now a separate division and has no connection with the Quartermaster Department.

Col. Fred Glover, who was formerly in charge of the Motor Transport Committee, now returns to the Quartermaster Department. Col. George, who was with Col. Glover, returns to the Signal Corps.

This reorganization looks like a complete victory for that department, or motor transport, which has stood for standardization of motor trucks and also for their rapid production. It can only be interpreted as a rebuke for those interests that have been opposed to the general standardization program. A year ago General Drake was one of the leaders in the movement for a standardized truck program.

### Discuss 100 Per Cent Cut

HARTFORD, CONN., Aug. 16—A special meeting of the Hartford Automobile Dealers' Association was held this evening at the Garde Hotel for the purpose of discussing the proposed order of the Government to place all passenger car factories on a 100 per cent war basis by Jan. 1.

Lucius H. Elmer, president of the association, came up from the shore to conduct the meeting, and in the name of the organization dispatched a telegram to the War Industries Board at Washington, calling attention to the fact the proposed measure would put 25,000 dealers out of the passenger car business. Elmer is the Ford distributor for northern Connecticut and operates 11 stores. His allotment has been cut down to 40 cars a month. Other dealers in the association are as badly affected.

Should the proposed order become a reality some of the Hartford dealers say they will close shop. Those who handle trucks and tractors are not worrying any.

The Hartford Automobile Dealers' Association does not take kindly to the manner in which the local daily newspapers handle the national news which has to do with proposed laws, contending that the publication of these proposed measures is hurting business. A proposition, however, to appoint a committee of three dealers to wait on the newspapers did not prevail. In so far as the proposed shutting down of passenger car production is concerned, some of the dealers have used the material as the clinching argument for closing sales.

## Truck Makers Left to Say Who Is Essential

### Priorities Committee Decides Not to Try to Make List of Essential Users of Commercial Vehicles

WASHINGTON, D. C., Aug. 16—Following the announcement in the last issue of Motor World to the effect that motor truck manufacturers will be given Class B-4 rating as consumers of steel, it can now further be stated that the original plan of creating a list of essential truck users, as was announced earlier in Motor World, has been given up for the time being. The Priorities Division has preferred to believe in the good faith of the manufacturer and distributor of motor trucks and is leaving the determination of the essential user to them. The monthly report of the manufacturers to the Automotive Products Section of the War Industries Board will be used by the Priorities Division to check the essentialness of the sales to non-essential users. The Priorities Division may be obliged to limit the sale of trucks by means of a specified list of purchases.

The Class B-4 rating comprises orders and work which, while not primarily designed for the prosecution of the war, are, however, of public interest and essential to the national welfare or otherwise of exceptional importance, according to the definition of Class B by the Priorities Board. Applications for priorities certificates are to be made as heretofore by each individual firm to the Priorities Division of the War Industries Board, Washington, D. C. The Priorities Board will furnish necessary blank forms for this purpose.

### Canadian Ford Resumes Operations

DETROIT, Aug. 17—After a complete shut-down of more than 5 weeks the Canadian factory of the Ford Motor Co. at Ford City, opposite Detroit, has resumed operations, but with less than 50 per cent reduction of the working personnel. Only 100 cars will be the daily production. Previous to the shut-down the normal output of the company averaged from 225 to 250 cars a day. While the company announced they were compelled to close down because of material shortage, numbers of the employees who signed petitions, demanding a wage of \$5 a day, charged they were dismissed and locked out.

### Detroit Dealers Elect Officers

DETROIT, Aug. 12—At a recent meeting of the board of directors of the Detroit Automobile Dealers' Association, Guy O. Simons, president of the Simons Sales Co., was elected secretary of the organization, and S. E. Comstock, general manager for Thomas J. Doyle, was chosen a director. J. C. Ayers, who

formerly completed the directorate as fifth member of the board, was elected vice-president. These vacancies were caused by the retirement from business of George W. Franklin, vice-president, and H. S. Quinn.

### Shifting to Agencies by Big Companies

BOSTON, Aug. 16—One of the most important changes in the motor selling policy of the International Harvester Co. is that it has changed in Boston from a factory branch, which had been in existence for years, to an agency. The business has been taken over by the Osborn-MacMillan Co., which has opened salesrooms on Jersey Street. The company comprises Lattimer W. MacMillan, of the MacMillan Engineering Co., and George L. Osborn, formerly a salesman with the Peerless and Marmon agencies. The International Harvester Co. will direct its wholesale sales from its present place of business at Somerville.

Some months ago the Chicago Pneumatic Tool Co., maker of the Little Giant truck, planned to close out its branch here and turn the business over to be handled as an agency proposition. The line was offered to some of the Boston dealers who at that time were after trucks as side lines, but the change has not yet been put through.

### Wants the Money Back

DES MOINES, Aug. 19—A case now on trial in the district court here is being watched with considerable interest by Des Moines motor car dealers and jobbers. The Overland-Sioux City Co. is suing R. J. and A. Clemens, of the Clemens Auto Co., for \$1,700 each.

This amount represents the share of the income tax which the corporation paid on the dividend earnings for the fiscal year ended July 1, 1917. The Sioux City firm was originally capitalized at \$25,000, of which R. J. Clemens and A. Clemens held \$5,000 each, the remainder being held by Sioux City parties. On the year's business ended July 1, 1917, the company declared a dividend of \$15,000, of which \$3,000 went to each of the Clemenses.

On July 27, 1917, the Clemens brothers sold their interest in the company, and in October last year the income tax bill passed Congress, being made retroactive. Of the \$15,000 paid in dividends \$8,500 was assessed by the Government under the income tax law. The company is now suing to recover from the Clemens brothers their share of the tax.

### Make Fords in Kansas City

ST. LOUIS, Aug. 12—Ford dealers here are having a new experience. They are getting occasional notices that assembled cars await them at the Ford assembly plant at Kansas City, the plant here having been given over to the army. So far all cars have been driven from Kansas City to St. Louis over the National Trails road. Excellent conditions prevail, except for the dust.

## Lenses Tested Under New York State Law

### At Rate of Two a Day—Expect to Know by Sept. 1 Which Devices Are Within the Law

ALBANY, N. Y., Aug. 20—The lenses and devices intended to eliminate glare and dazzle which are being tested at the electrical testing laboratories in New York City under the direction of Secretary of State Francis M. Hugo are as follows:

Mac-Kno-Glare shells and frosted bulbs; Diamond E prism lens; Legalite lens; Conaphore lens; Nu Ray, Sun Ray and Prismolite lenses; Osgood lens; Prismolite lens; McKee lens; Coreylite; No-Glare-On lens; Holophane lens; Raydex lens; Warner lens; Saferlite diffusing; Saferlite deflecting; Stryker deflecting device; Dillon lens; Legal Level Light; More-Lite, clear; More-Lite, amber; Pathfinder, Duplex; Controllite; Lee-Knight lens; Cut-Star; Lenslite; Dwelllight lens; Queens auto lens; Non-Glare lens; Macbeth and Liberty lens; Shaler Roadlighter; No-glare lens; Stopglare lens; Dalsey lens; Crew-Levick Fractors; Stewart lens; Letts Reflector; Hein Dimmer; E-Z-2-C lens; Clamert lens; Suesas Rib lens.

The tests are being made at the rate of two a day, and at this rate the entire work will be completed, and the list of those complying with the new law will be announced before Sept. 1.

The conclusion of these tests will not only determine the lenses and devices which may be used in New York State, but also settle in an authoritative way the maximum candle-power which may be used with each lens or so-called dimming device. According to Secretary Hugo there are thousands of motorists using their headlights in a way that violates the existing law and are a source of danger to other motorists.

### McKean County Organizes

SMETHPORT, PA., Aug. 16—An organization to be called the McKean County Automobile Dealers' Association was formed yesterday. Other counties throughout the United States have already done the same. The association will see that all garages in the county are closed on Sundays and after 6 o'clock p. m. week-days, with the exception of Saturday night. A meeting will be held next Tuesday at Kane, at which time the date for the closing movement will be decided upon.

The officers of the McKean County Association are: President, Fred Hungi-ville, Smethport; vice-presidents, E. J. Healey of Kane, Walter Stewart of Bradford and R. A. Shear of Port Allegany; secretary, C. H. Deninger, Bradford; treasurer, J. J. Bisett, Bradford. The directors are Fred Hungi-ville, J. J. Bisett, W. J. Downs, J. E. Healey, C. H. Deninger. A committee consisting of H. K. Emons, J. J. Bisett and John Mc-Ambly was appointed to decide the date upon which the closing movement would start.

# “NURSING ALONG”

## FIRST TRACTOR CUSTOMER

How Reports of Actual Working Conditions and Operating Costs, Both from Salesmen and Farmers, May Be Utilized to Gain More Patronage

By K. H. Lansing

TO give fullest service in connection with selling tractors, the dealer should have his selling force become familiar with what actually is being accomplished on farms with the particular type of machine sold, as well as with what different uses it may be put to theoretically.

There is nothing quite so convincing to the average farmer who is about to purchase a tractor as to be referred to some one with whose name he is familiar as the owner of such a machine and with whom he may talk before buying. If the salesman has in the first place given proper service and instruction to the first farmer who purchased a tractor, the second farmer prospect, when he goes to ask about the tractor, will not find a “de-tractor.”

Just as nothing succeeds like success, so the dealer will find that the farmer in a given neighborhood who has bought a machine will, if he receives proper attention, prove to be the lure for more customers. In a case like this the first customer should be given satisfaction to the surfeiting point for just this purpose.

One Philadelphia salesman said about his first tractor customer: “I found it worth while to ‘nurture’ that initial granger and his tractor to within one notch of the nuisance stage.”

### Some Farmers Suspicious

Farmers in some localities are notional, easily offended, suspicious that the city salesman means to “sting” them and are quite put out if a machine doesn’t work “like goose grease” the first time it is used. Therefore that first customer must be nursed along; he must be catered to

### What One Farmer Does With His Tractor.

- a—Saws wood.
- b—Grinds feed.
- c—Fills the silo.
- d—Cuts fodder.
- e—Draws the binder.
- f—Draws the corn harvester.
- g—Draws the hay loader.
- h—Draws the manure spreader.
- i—Draws the plow, disc and harrow.
- j—Drags logs.
- k—Pulls stumps.

and there must be a certain solicitude about his machine, never, though, permitting a suspicion to enter the granger’s mind that the salesman suspects there may be something the matter with it. It is just the “coddling” process carried out so there will be no disappointment and no vexation through misunderstanding of instructions or misapplication of mechanical principle.

### Customer Visited Often

One concern handling tractors sends out a salesman—preferably the man who sold the machine in question—to the first customer several times during the month of the sale in one of the company’s cars whenever there is a slack period and he can be spared, with a two-fold purpose in view: 1—To “nurse along” the farmer and see that he is using the tractor properly, and 2—To see what he can learn from the granger in turn, for wide-awake farmers sometimes find a new use for the machine, or a new way of applying the power, and then the salesman’s trip has been profitable, indeed.

*It is by watching the farmers, either*

*occasionally in person or through report, that the dealer is able to build up the very best selling arguments to use on the next prospect. Trite as it sounds, it is a big item.*

Where the salesman cannot be spared an invitation to the farmer to write in and tell how his machine is working has been found valuable, the dealer’s letter being accompanied by a self-addressed, stamped envelope, with possibly suggestions for testing the machine. It usually takes the farmer a long time to reply to a letter. He may have the most modern kind of desk and office equipment in his home, but somehow few seem to answer correspondence as quickly as they might unless either stamps or stamped envelopes are enclosed for reply.

Here, however, is a report sent in by a Pennsylvania farmer who did not have to be coaxed to answer and who gave valuable information, including operating costs, on the kind of work he was doing—more valuable than theoretical operating costs worked out simply for sales purposes.

### Some Valuable Facts

The report, from S. M. Trimble, Upland, Pa., gives facts which, to any neighboring farmer, would prove far more convincing than any salesman’s figures and estimates. It says:

“We have an 8-16 Mogul I. H. C. tractor. We figure on 30 per cent depreciation for the first year and 10 per cent for each succeeding year. Some owners figure on 25 per cent each year, but we consider that a little high. I feel sure that the life of a tractor with a good operator is more than five years, although I have found little data on the subject.

“Our repairs run about \$10 a year, although some of the neighbors’ run as high as \$50. All mine have been breaks due to careless handling. Only very little of the mechanism is badly worn.

“As to fuel: We use kerosene entirely after the first five minutes, although we start the machine with gasoline. For plowing we use about two-thirds of a gallon per hour, depending on the soil, and we figure our



plowing as one acre every two hours with a two-bottom, 14-inch Oliver gang. I take about one gallon of gasoline for starting; lubricating oil, one gallon every ten hours; and compression cup grease, about two pounds every ten hours. For belt power, we use two gallons of kerosene per hour.

"I find that upkeep expenses vary.

We use our tractor:

- "a—To saw wood.
- "b—To grind feed.
- "c—To fill the silo.
- "d—To cut fodder.
- "e—To draw the binder.
- "f—To draw the corn harvester.
- "g—To draw the hay loader.
- "h—To draw the manure spreader.
- "i—To draw the plow, disc and harrow.
- "j—To drag logs.
- "k—To pull stumps.

"We could never get along on this farm without our tractor. But one should remember that even when it is idle, the interest and depreciation are at work. Here is a statement of operating costs for a year:

Tractor's cost price.....	\$675.00
Freight .....	24.00
Worked 100 days, 8 hours each.	
18 gals. kerosene, per hr. @ 11c.....	1.98
10 gals. gasoline @ 23c.....	2.30
75 gals. lubricating oil @ 43c.....	32.25
50 gals. transmission gr.....	4.90
50 gals. cup gr. @ 10c.....	5.00
Repairs .....	10.00
Depreciation, @ 30 per cent.....	210.00
Interest on \$700 @ 5 per cent.....	35.00

"Note: Kerosene, lubricating oil and gasoline now a little higher than when report was issued. Repairs are now 30 per cent higher."

It may easily be seen that reports of this nature, made with reasonable frequency from various customers, and shown to prospects, may act as either the opening or the clinching argument and perseverance will bring them.

Any figures, of course, on the expense of keeping tractors in repair, unless they are obtained in some such manner, are very general, and as costs vary with regard to repairs, oil, kerosene and gasoline, they change rapidly. But the salesman should always have ready the argument that the amount of repairs necessary for any given machine depends on a number of factors—the care the outfit receives, including whether the operator be skilled or unskilled; the nature of the work to be done and so on. It is well, also, to accentuate that the "care" of the tractor does not refer entirely to care when in use, but that *care in shelter is a factor and that a machine must be kept from the ravages of weather.*

Most tractor manufacturers are willing to keep the machine in repair for the first year, except for such items as are caused by some neglect of the operator, so therefore it is not until the second year, in such cases, that the owner begins to bear the full expense. Few machines go through their second year without repair charges, the amount depending somewhat, of course, upon the size and cost of the machine.

Figures in many instances seem to indicate that the repairs on the two-plow outfits are slightly higher in proportion to first cost than those for the three and four-plow machines. Some figure that the average repairs borne by tractor owners the first year will amount approximately to 1½ per cent of the first cost of the tractor, while for the second year this amount is doubled; but there is no fixed rule. Some manufacturers state that the average percentage of the first cost of a tractor in general which is expended annually for repairs will exceed 4 per cent; but it is regarded by not

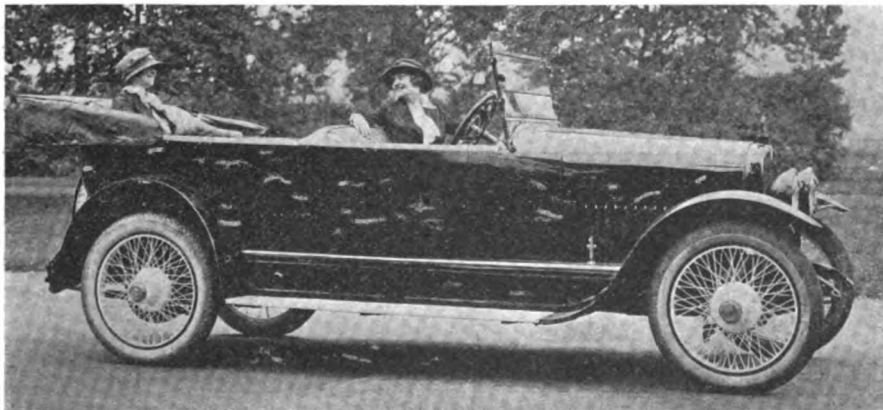
a few dealers that the annual repairs required by a tractor during its life—be it five years or eight—hardly would fall below this figure. If eight years is taken as a basis it would mean a total expenditure equal to 32 per cent of the tractor's first cost.

If a large number of dealers is selling tractors in a certain territory, it is necessary, of course, for those just entering the field to watch carefully, to see whether that territory is being over-sold on tractors of a certain size. For instance, one house in Philadelphia recently took on a small tractor, giving as the reason for turning down a big one that it had found the market in that territory over-sold for tractors of the larger type, as Pennsylvania has many farms of only 60 or 70 acres, for which the big machine is unsuitable.

The salesman of tractors for this house is a firm believer in first "doping" out your territory and then either selling a certain number of machines within a certain time, or discontinuing the line quickly. "I must sell about thirty a month," he remarked, "or I don't want them at all. I figure on disposing of at least 250 in a season."

Now, especially, when many concerns heretofore dealing only in passenger cars are taking on tractors as a line more dependable in certain localities since the war, salesmen must familiarize themselves with conditions in the farming communities; no passenger car salesman can expect to leap into success with the sale of farm machinery without studying the situation. The house selling motor trucks usually is equipped with at least a little information on farming conditions, but the wide-awake concern is constantly on the alert to see that its selling force has the proper schooling.

## Jordan Has "Suburban Seven"



**ECONOMY** in weight and body space is one of the features of the new Suburban Seven which will be one of the models for the coming season of the Jordan Motor Car Co., Cleveland. The characteristic body style of the Suburban Seven is the long, straight side lines with beveled edges. The top runs in a straight line from front cowl to rear of tonneau without the usual bulge found in the old-fashioned touring car, yet giving full seven-passenger capacity. This car, with the 127-inch wheel base and all aluminum body, is said to weigh only 3100 pounds.

## Marking Wrenches

Editor Motor World: In your issue of Aug. 7, under the heading, "Letters from Readers," appeared an article by a reader asking for an exchange of ideas

on wrench sizes and how to identify them.

We have never found any satisfactory way of marking wrenches, as each manufacturer of wrenches seems to have his own idea as to the size of his wrench,

and marks it accordingly, and seldom, indeed, do the ideas of two manufacturers coincide.

We use a tool board, mounted on the wall above the work-bench, each tool being placed on the board according to its size, and held by suitable hooks or brackets. The tool is then outlined on the board and the outline filled in with black paint, so if the tool is missing we can tell at a glance just what it is, and look it up. Just above each tool is a number, which corresponds as far as possible with the number stamped on the tool, such as "25-W" for a 25 Williams wrench or "25-V," etc.

In case of Walden or similar wrenches of the same size and shape, but with different size openings, we place a number above, and place a nut or bolt that the wrench was made for below each wrench, so that it may be returned to its proper place and number.

Our mechanics are familiar with our wrench numbers and can call for the right one almost every time.

Our special wrenches are identified by a card alongside the tool board, upon which is written the name of the bolts or nuts that a wrench is made to fit, and opposite the name is the number of the wrench that fits them.—E. L. Dickson, Anchor Auto & Truck Co., Sumter, S. C.

# Segregating Service Work

*Methods Employed in a Large New York Service Station to Increase the Efficiency of the Organization*

**W**HEN a man confines his efforts to one particular line of mechanical activity it is probable that he will become more proficient in this particular line than if he scatters his activities over all sorts of mechanical trouble. The theory can still further be carried out by having all sorts of repair work of a particular kind done on one floor or on a section of one floor.

The Hudson Motor Car Co. of New York, which has one of the largest service stations devoted exclusively to passenger car service in the city, has adopted many big and little systems to get the greatest amount of work done with the small supply of labor now available and the limited supply of materials.

It has adopted the segregation-of-work idea to a large extent. J. S. Gfrorer, the general manager of the station, does not believe that a rear axle man is a good man to put on engine work, or vice versa. Neither does he believe that it is advisable to have the finishing and varnishing department in the same locality as the machine shop. Keeping these things in mind, the six-story building has been departmentized to secure the maximum of efficiency, the best quality of work and the least possible amount of running around and shifting cars on elevators.

The ground floor of the service station is given over to inspecting and making out repair instructions on incoming cars. When a car enters the building an inspector armed with a report blank either records the owner's instructions or, if the owner does not know exactly what he wants done, finds what is needed by a superficial examination and enters it on the blank. If the car has to be dismantled in order to find out what repairs are

needed, it is taken to an upper floor, thoroughly gone over, and an estimate of the cost sent to the owner.

Estimates on repairs are invariably furnished where it is expected that the total will be over \$25. There is an office on the ground floor where the repair orders are made out in quadruplicate so that copies can be furnished to the various departments in the building, such as records, accounting, etc., and a repair tag made out for shop work. A card index file containing records of every Hudson car ever sold in New York is available, so that the car number, date of sale and other particulars can be obtained without loss of time.

Before the car is sent to one of the upper floors for the needed repairs, every article is removed from the car, including robes, Moto-meter, tools, jacks, etc. These articles are put in a box labeled with the car number and the box placed on a shelf in a large cage, much the same as a coat rack.

## Executives' Offices and Stockroom

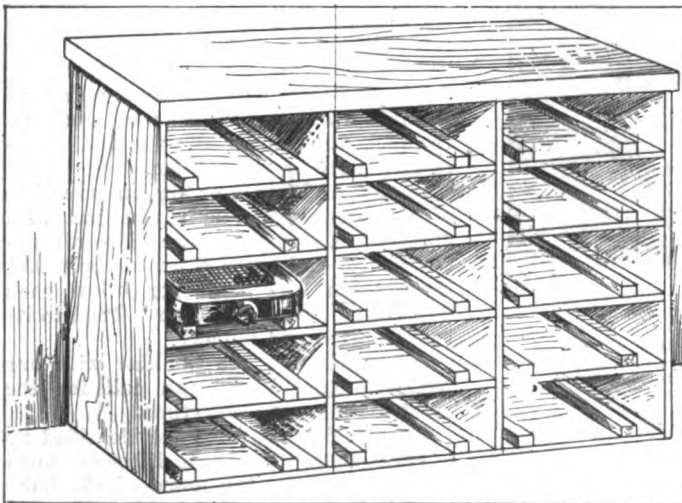
On the second floor are the executive, accounting, estimating and other offices, partitioned off from the rest of the floor and in the front of the building where the desks can receive daylight. The remainder of the floor is given over to a stockroom containing parts for every Hudson model ever made. These parts are kept in numbered bins. Index charts enable the parts to be easily found. Electric dumbwaiters connect the stockroom with the shop floors above. Various systems of storing the different parts are used, one of the interesting contrivances being the rack for holding fenders. This is a wooden affair erected any place on

the floor with a series of hooks a few inches apart, and the ends of the fenders are hung on these hooks. By means of this scheme the fenders can be hung up where they will not be kicked around. The distance between the hooks is such that the fenders will not rub against each other, and they have the same finish when they are put on the car as when they were received in the service station. Another service stunt is the radiator rack, which is a cabinet divided in a number of sections with shelves, each shelf having two strips to prevent the fins of the radiator being damaged by contact with the shelves themselves. These racks are not confined only to the stockroom, but are used in other parts of the building where radiators have to be laid aside for various purposes.

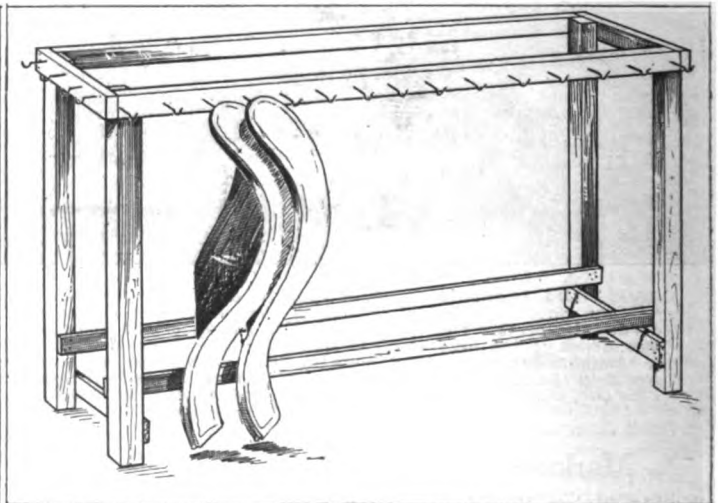
Where repairs are of a minor nature, such as regrinding valves, carbon removing, and other jobs which will not take more than a day, the cars are sent to the third floor. This saves time and elevator space, as the greatest number of cars come into the service station for this very class of work. The floor is subdivided into sections for various kinds of work, one corner being devoted to engine trouble, another to rear axle trouble, and so on.

The fourth floor is devoted to rear axle overhauling. Here all sorts of special tools and jigs are employed to save time and labor. There are special axle stands for old model Hudson axles, and in most instances these stands save the labor of one man.

The fifth floor is devoted to general overhauling outside of the rear axle work. A number of engine stands are provided in which the engines can be



When a radiator is taken from a car the radiator is placed in a rack in which are strips to prevent the fins being damaged



On the fender rack is a series of hooks, placed just far enough apart so that the fenders do not touch and become marred

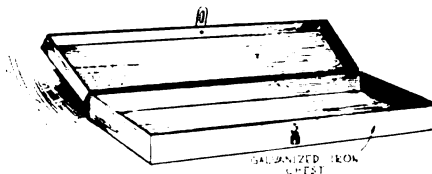
mounted and turned at any angle, to do any kind of work to either the top or the bottom.

The sixth floor is devoted to finishing cars that have been overhauled mechanically. At one end of the floor is located the body-finishing department, where the old finish is cut down, rough stuff rubbed down, and so on. After this work is completed, the car is taken to the varnishing room, where the finishing coats are put on.

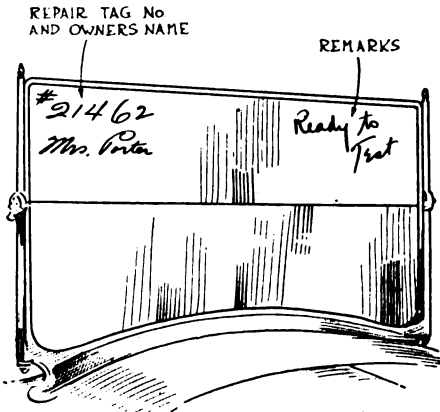
This room is especially constructed with dustproof doors and windows. Just before applying the varnish to a car a fan provided with a water sprayer is started up and throws minute particles of water through the air and settles the dust so that when the varnish is applied no dust can settle on it. In the far end of the room from the varnishing shop is the department where upholstery, tops, curtains and so on are repaired, or new ones made, as the case may be. The fabrics for these various materials are on rollers.

All the rollers are in a rack at one end of the cutting bench where they are handy for the workman. A number of special sewing machines for this class of work are also in use. The problem of keeping celluloid in a place where it will not take fire nor be stolen is taken care of by having a galvanized-iron box with a hasp and staple soldered on and locked with a padlock. When the celluloid is placed in this box it is absolutely safe from fire, and when it is locked at night nobody can steal any of the sheets unless the box is broken entirely open.

The roof has a house on one end of the



*Small articles taken from a car are put in an iron box and stored in a rack something like the radiator rack*



*A record of the job is noted on the windshield with wet chalk, which saves picking up the tag to find out whose and what the job is*

building in which is kept the sprinkler apparatus. A portion of this house is utilized for the tinsmithing shop, where repairs are made on radiators, fenders, mudguards and all sheet metal work. Old radiators are rebuilt, mudguards

straightened and similar work done. One reason for putting the tinsmithing shop up on the roof was the great amount of noise involved in these operations. Another reason is that where heat is used for soldering iron it is preferable to have the work done on the roof, where a current of air is almost always available, as the building is of considerable height.

An innovation in the Hudson service is the use of what is called a "Promise Man." This man does nothing else but go around to the different foremen and get promises or estimates on the amount of time that it will take to finish particular cars. Then when inquiries come into the service station as to the possibility of getting a car at a certain time, the "Promise Man" is put on the phone, and he is able by means of his records to ascertain just when the car will be finished. This takes all this detail away from the foremen of the various departments and saves a lot of running around and unnecessary disturbance of regular routine work.

Another scheme that is of considerable interest is the marking of the windshields with wet chalk, giving the number of the repair tag, the owner's name and any remarks as to the work done or work still to be done. This saves picking up repair tags on the different cars for identification. It is of great importance where some hundreds of cars are parked on each floor.

#### State License for Trucks Passing Through Maryland

PHILADELPHIA, Aug. 19 — Announcement is made here that Governor Harrington, of Maryland, has ruled that motor trucks from Pennsylvania and other states which constantly have been using Maryland roads will have to be licensed under Maryland laws and pay Maryland license rates. Since the railroad congestion hundreds of trucks, the Governor says, from outside Maryland have been making regular trips over the roads of that state, many hauling freight from Philadelphia, Boston and New York. Until now these trucks have been allowed free use of these highways under a reciprocity agreement.

#### Vesper Finds Time to Sell Thrift Stamps

Even though F. W. A. Vesper is president of the National Automobile Dealers' Association he finds time for other work. He is a member of the permanent committee on sale of the War Savings Stamps in St. Louis, but that has not deterred him from aiding other movements. He was a leader in the Third Liberty Loan and later in the Red Cross movement. In the latter campaign he turned his show windows over to the Red Cross publicity men. The picture at the left is the result as it looked from the corner, showing the Red Cross and W. S. S. sharing his plate glass



# What the Farmer Thinks of the Tractor Dealer

*Service Is the First Essential in the Tractor Business—Every Dealer Should Carry a Complete Stock of Repair Parts*

**I** MIGHT be favorably disposed toward a certain tractor and like it better than any other, yet if the dealer who handled it in my vicinity did not carry always a complete stock of repairs for it I should forget my preference and buy a tractor of some other make, *even though I knew nothing about it*, from some other dealer who did carry a stock of repairs.

"This matter of the dealer from whom he buys carrying a stock of repairs is one of the most important things a farmer will consider when he comes to buying a tractor," says D. W. Rice, a well-to-do farmer near Champaign, Ill.

## Must Be Near Dealer

"It means something for the farmer to be near a dealer who can give him quick service and good service when he needs it, and above all one who has a stock of repairs so that when anything breaks, new parts can be got immediately. If the farmer must wait until pieces come from the factory he may lose, by the idleness of his machine, all of the advantage the tractor otherwise would be to him. I believe every tractor dealer should always carry a complete line of repairs for the tractors he sells. If the farmer cannot get repairs promptly, he would better stick to his horses and be done with it." This is the opinion of William Ohmes, a neighbor of Mr. Rice, who is planning to displace, by a tractor which he recently bought, nine horses out of twelve which he has always kept in the past for his work.

This viewpoint of the farmer brings out clearly the fact that the dealer, if he would be successful in the selling of tractors, must put himself in a position where he can give prompt, efficient and satisfactory service.

Another farmer, Charles Rohdes, who also owns a tractor on a farm near

Champaign, Ill., says that "a tractor is used by the farmer for necessary work, and its value to him lies in its ability to do that work when it should be done. When anything happens which puts the tractor out of commission the tractor operator is idle and work stops. It is different when anything happens to a horse. The farmer nearly always can change teams and go ahead, but when his tractor fails him, he is helpless. There is nothing to take its place. It always happens, too, that some of the parts of the tractor breaks down just when it is needed the most and never when it is standing idle. It is all important for the farmer to know that his tractor is going to work or that if anything does happen it can be put into condition to resume work without delay. Unless he can be sure of this, the tractor is of no use to him."

## No Experiment for Farmer

The farmer buys a tractor for a well-defined reason. It is no experiment with him. He has certain work to do which must be done in a certain way and at a certain time. He has bought the tractor upon representations from the manufacturer or the dealer that it will provide him with power to handle his tasks in the way they should be handled. This implies an obligation upon the part of the manufacturer and dealer to see that the farmer is not disappointed. Neither manufacturer nor dealer can any longer sell a tractor or any other piece of farm equipment and forget it. Both have induced the farmer to invest hundreds of dollars in something which must be kept in a state of constant efficiency or else the investment is a losing venture. Neither manufacturer nor dealer has a right to neglect the duty which rests upon him to make this investment a profitable one for the farmer. This means that service must be given.

## Not Free Service

It does not mean that service should be free, for the farmer does not expect that. He is perfectly willing to pay for parts and for time, but he insists, and he has a right to insist, that the man from whom he buys his tractor should respond promptly to a call for assistance or for parts when it is made. The growth of the tractor industry has been such that it is impossible any longer for the manu-

facturer or any of his branch houses to meet the service demands which come from the territory. This is something which has been passed on to the dealer, and the latter must give it attention.

It is not only good merchandising policy for the dealer to provide himself with the necessary equipment for service and with a stock of repairs that will meet any ordinary needs in his territory, but also it is a business necessity. Unless the dealer realizes this fact he cannot be a success as a tractor dealer, and the trade will go to some rival who has a better conception of what constitutes tractor service. The opinion expressed by Mr. Rice, who is quoted above to the effect that preference for a tractor and preference for a particular dealer are not the determining factors in the farmer's purchase, but that he will be influenced by service, is not Mr. Rice's opinion especially, but is typical of what hundreds and thousands of farmers believe. No more significant statement was ever made by a farmer, and the dealer who goes into the tractor business should give it serious consideration.

## Dealer Must Prepare

The dealer who neglects to equip himself for service or who takes chances by depending upon the manufacturer or the branch house runs the risk of losing everything he has at stake in the tractor business. A case in point came under our observation a few days ago where a dealer had for nearly two years endeavored to build up trade on a particular tractor. After he did succeed in placing some twenty of them he lost his agency because he had neglected to provide himself with a stock of spare parts. One of the tractors he had sold broke down in the midst of the plowing season. Not having the part in stock he ordered it from the nearest branch house of the manufacturer. Either because of carelessness in ordering or carelessness in shipping, two errors were made before the right part was received. The result was that the farmer's tractor stood idle in the field for nearly three weeks at a critical time of the farmer's year. The farmer was angry, as he had a right to be. He expressed himself unreservedly regarding the dealer and the service he rendered. He made disparaging remarks about the tractor, which certainly did it no good in that community.





*This shows one driver handling a train of three cars. In the picture at the right the driver is pointing at the towing hitch, while the ignition wire is seen extending between the cars*

## One Man Can Drive 3 Cars at One Time

**Arnold, of Los Angeles, Works Out  
Method Whereby One Control  
Drives Train of Three**

**S**CARCITY of freight cars is proving no handicap to Harold L. Arnold, the Los Angeles Maxwell distributor. By employing a plan devised by W. M. Hinds three cars are now delivered at one time by one man, and during the trip *each car operates under its own power*. The result of the system is that the time of two men and their return fares is saved by the dealer whenever Hinds makes a delivery. In addition to these, the owners receive their cars more quickly than would otherwise be the case.

The three cars are linked together en-train by a specially devised trailer hitch. The two rear cars track perfectly with the first car, and there is no difficulty in turning sharp corners and negotiating mountain passes. The ignition systems of the two rear cars are connected by long wires to a switch clamped on the steering column of the first car. The trailer cars are put in high gear and the throttles set for a speed of 20 miles an hour.

With the power of the first car the driver starts towing the two trailers, then opens the ignition switch that controls the rear cars and their engines start, because they are in gear and the rear wheels are turning the engines.

In order to stop on descending a steep grade Hinds shuts off the ignition on the trailer cars and they then operate against the compression of the engines, which serves as a brake. The system devised by Hinds is working out very satisfactorily. He has made three-car deliveries in this manner to points as far distant as Bakersfield and San Diego, to reach each of which places it is necessary to ascend steep grades over the mountains.

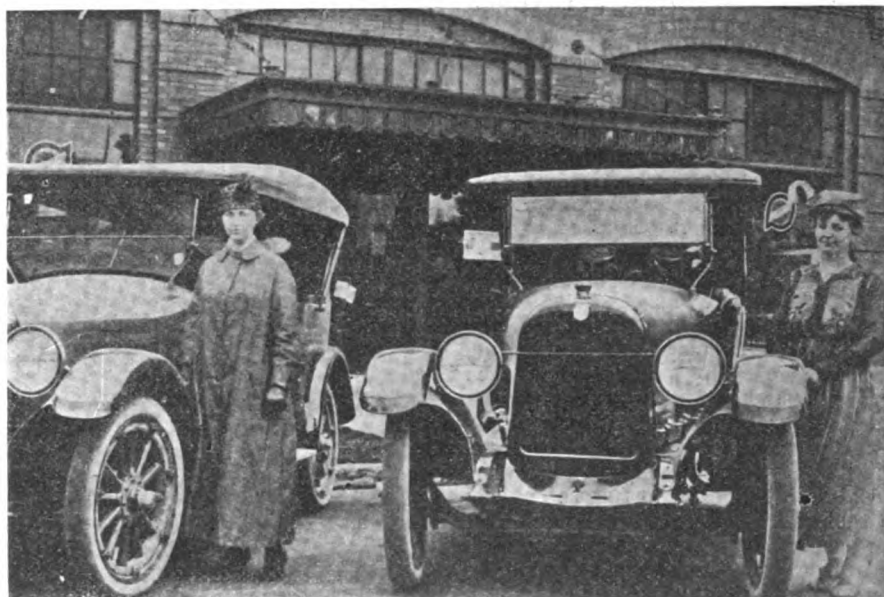


*The driver has a switch on the control which does the work*

## Women Becoming More Numer- ous in Service Stations

LOS ANGELES, Aug. 17—Women employees in garages and service stations here are becoming more numerous. It has been learned that as stockroom clerks, tire mounters and battery workers women have proved successful and efficient. The scarcity of skilled mechanics is growing and dealers themselves no longer are adverse to going into the shop and helping out in an emergency. At the same time a decrease in the amount of repair work is reported.

Owners of cars are learning to do odd jobs about their cars. Several hundred cars have been withdrawn from use. Some of these are owned by men in military service, of course, but not a few owners are refraining from using their cars as a conservation movement.



*Women are making a success of the automotive business. This shows Mrs. J. A. Frankle, Studebaker dealer in New Holland, Ill., and one of her sales assistants. Mrs. Frankle handles every phase of the business successfully and conducts drive-aways from Detroit*

## Plan to Help Dealer Give Tractor Service

### Wisconsin Association Formed by Tractor Makers and Will Show Dealer What Tractor Needs

MILWAUKEE, WIS., Aug. 19—Plans for bringing tractor service in Wisconsin to a high state of organization and efficiency are now being made by the Wisconsin Power Farming Association, organized by representatives of more than fifteen large tractor manufacturers located in or having branches in Wisconsin.

A principal activity from the beginning will be to give service to farmers who own tractors in much the same manner as is done in the passenger and commercial car fields. In line with this policy, it is the intention of the association to make it obligatory upon every dealer in tractors to carry a sufficient stock of parts to enable farmers to keep their machines in service at all times, and more particularly during the rush seasons. This plan involves also ample provision for quick service in making repairs and replacements, either in an established service station or on the ground.

Details have not been fully developed, but excellent progress is being made, and the association hopes to have its plan in operation by the time the fall plowing season begins.

This development in the farm tractor field in Wisconsin is regarded by motor car dealers and garagemen as most favorable to their business, since they have established service stations and generally ample accommodations for carrying stocks of parts, and in addition have a wide experience in furnishing service of this character.

Under existing conditions in the passenger car industry, there undoubtedly will be considerable available capacity in many garages open to just such utilization as this. It is felt that the garages in the smaller communities of Wisconsin are particularly well situated in this respect, as they are close to the field of operations of the tractor and can quickly adapt their existing organizations to tractor service without prejudice to the attention required by the present passenger and commercial car demands upon them.

Tractor and motor car men as well, who have made a study of conditions in Wisconsin, say that up to this time the motor car trade has left the tractor business pretty much to the farm implement dealers. One of the reasons ascribed for this fact is that the motor car dealers have been too fully occupied with their ordinary and regular car and truck business to be able to assume the added responsibilities involved in the acquirement of tractor sales or distribution rights, with the attendant demand for service. With the readjustment that is expected to come in the passenger car industry the way is opened to dealers

to enter the tractor business on a broad scale, with almost every requisite advantage already at hand for very good success.

At the same time, the farm implement trade is rather poorly equipped, relatively speaking. Implement and farm machinery service is an infant, compared to motor car and truck service, and it is nowhere near the state of efficiency that the rapid development of the tractor already requires. It is said that if the implement trade as such is to handle the bulk of tractor merchandising, it will find it necessary to make considerable investments in buildings, machinery, equipment, etc., and the upbuilding of service organizations nearly from the ground up.

The men who compose the Wisconsin Power Farming Association either are the sales managers of the tractor manufacturers located in Wisconsin or the state distributors or branch managers. Their business, of course, is to merchandise the product to the greatest possible advantage, and the ability to give service is a prime consideration in the selection and retention of tractor dealers. While no intimation has ever been made by any member concerning the availability of motor car dealers in prosecuting tractor distribution, it is known that the position of these dealers, especially with respect to service and maintenance, finds favor among the tractor men, and they are willing to give due consideration when the selection of a dealer involves both a farm implement and a motor car representative.

The Wisconsin association has scheduled another meeting for Tuesday, Aug. 27, at the Hotel Medford, Milwaukee, at which time plans will be made for a general tractor meeting during State Fair week, Sept. 9-14. This will be held at the Republican House, Milwaukee, on Friday, Sept. 13, and a general invitation will be issued to dealers and owners to be present to become acquainted with the operation of the tractor service now being formulated.

## Buick to Increase Prices September 1

### New Models Will Be Raised All Along the Line from \$230 to \$310—Lowest to Be \$1495

DETROIT, Aug. 17—The Buick Motor Co. will advance the prices of its new 1919 models as soon as they come out, or about Sept. 1. Prices follow:

Model	New Price	Old Price	Advance
H-44 (Roadster) .....	\$1,495	\$1,265	\$230
H-45 (Touring) .....	1,495	1,265	230
H-46 (Coupe) .....	1,985	1,695	290
H-47 (Sedan) .....	2,095	1,845	250
H-49 (Seven - passenger touring) .....	1,785	1,495	290
H-50 (Limousine) .....	2,485	2,175	310

The foregoing prices are without the 3 per cent tax.

### Ford Building for School

DES MOINES, IOWA, Aug. 17—The use of the new Ford building just completed here has been offered to the public school officials of Des Moines. The offer was made by C. L. Herring, representing Henry Ford, and was for the period that the building is unoccupied as a motor car plant.

Des Moines recently voted bonds for the construction of three new high schools, but the capital issues board has held up the selling of the bonds. The building just completed by Ford is six stories, fireproof and could readily be made usable as a school building.

### Des Moines Dealers to Play

DES MOINES, IOWA, Aug. 17—Members of the Des Moines Motor Trades Bureau and their families will hold a picnic and frolic Monday night, Aug. 19, five miles from the city. The picnic takes the place of the regular monthly meeting of the bureau.

## Automotive Securities Quotations

	Bid	Asked		Bid	Asked
*Ajax Rubber Co. ....	62	64	*Maxwell Motor Co., Inc., 2d pfd. 19½	20	
*J. I. Case T. M. Co., pfd. ....		84	Miller Rubber Co., com. ....	105	110
Chalmers Motor Co., com. ....	4½	5½	Miller Rubber Co., pfd. ....	95	98
Chalmers Motor Co., pfd. ....	20	30	Packard Motor Car Co., com. ....	110	120
*Chandler Motor Car Co. ....	86	89	Packard Motor Car Co., pfd. ....	94	97
Chevrolet Motor Co. ....	132	137	Palge-Detroit Motor Car Co. ....	17	19
Fisher Body Corp., com. ....	36½	37	Peerless Truck & Motor Corp. ....	14	16
Fisher Body Corp., pfd. ....	90¼	91	Portage Rubber Co., com. ....	110	112
Fisk Rubber Co., com. ....	59	63	Portage Rubber Co., pfd. ....		
Fisk Rubber Co., 1st pfd. ....	99	103	Regal Motor Car Co., pfd. ....		
Fisk Rubber Co., 2nd pfd. ....	78	83	†Reo Motor Car Co. ....	14	15
Firestone Tire & Rub. Co., com. ....	106	110	*Saxon Motor Car Corp. ....	6½	7
Firestone Tire & Rub. Co., pfd. ....			Springfield Body Corp., com. ....		
*General Motors Co., com. ....	153	154½	Springfield Body Corp., pfd. ....		
*General Motors Co., pfd. ....	81¼	81½	Standard Motor Construction Co. 12	13¼	
*B. F. Goodrich Co., com. ....	45¼	45½	*Stewart-Warner Speed. Corp. ....	56½	57½
*B. F. Goodrich Co., pfd. ....	98½	100	*Studebaker Corp., com. ....	44½	45½
Goodyear Tire & Rub. Co., com. ....	152	157	*Studebaker Corp., pfd. ....	85	90
Goodyear Tire & Rub. Co., pfd. ....	97½	98½	Swinehart Tire & Rubber Co. ....	46	55
Grant Motor Car Corp. ....	3	3½	United Motors Corp. ....	31½	32
Hupp Motor Car Corp., com. ....	3	3½	*U. S. Rubber Co., com. ....	61	61½
Hupp Motor Car Corp., pfd. ....	79	82	*U. S. Rubber Co., pfd. ....	104¼	104½
International Motor Co., com. ....	25	32	*White Motor Co. ....	46½	48
International Motor Co., 1st pfd. ....	60	65	*Willys-Overland Co., com. ....	19½	19½
International Motor Co., 2nd pfd. ....	35	42	*Willys-Overland Co., pfd. ....	82¼	83¼
*Kelly-Springfield Tire Co., com. ....	49	50½	Standard Parts .....	55	65
*Kelly-Springfield Tire Co., 1st pfd. ....	80	87			
*Lee Rubber & Tire Corp. ....	22	23			
*Maxwell Motor Co., Inc., com. ....	25¼	26			
*Maxwell Motor Co., Inc., 1st pfd. ....	54½	55½			

\*At close of business Aug. 20. Listed N. Y. Stock Exchange. †Par value \$10.

## California Has Cars Yet Sales Take Drop

**Neither Have Dealers on Coast Gone  
Into Automotive Lines—Short-  
age of Trucks Felt**

LOS ANGELES, Aug. 17—Passenger car sales in Southern California are well below normal for this season of the year. This cannot be attributed to lack of cars, as practically every distributor has cars in storage. Buyers are scarce and increasing prices have not served to stimulate trade in the least. Acting under government instructions banks are refusing to accept automobile paper, and to any but well financed dealers this is proving an additional handicap.

Dealers are not seeking to stimulate wholesale business in the least. Recognizing the greater margin of profit from retail business, many are increasing their sales forces and restricting the number of cars to sub-agents. It is harder to sell motor cars now than ever, and by tightening up on trades, shortening the time allowance and reducing service the attempt is being made to corral as much actual cash as is to be had.

For some reason or other that cannot be ascertained, Los Angeles distributors are not broadening their field of possibilities. Not one passenger car dealer has taken on a truck or tractor line in the last three months. The only reason they assign for this is that they do not understand those branches. They will have to awaken soon, however, and then will come a scramble for trucks, tractors or anything else that will help maintain the overhead expenses until the war is over and the passenger car business gets back on its feet.

The exclusive truck dealers are having their troubles also. Few of them are willing to accept long-time payments such as were customary in the past when the purchaser expected to pay for his truck through its earnings. Service departments have suffered because of the best mechanics quitting for work in the shipyards or elsewhere where wages were higher. One of the largest distributors in this territory has stopped all advertising, because his allotment from the factory has been reduced so that he cannot seek new customers but must reserve what stock he gets for repeat orders from present users. He has an order from a public utility corporation for eleven trucks, and that is more than he will get from the factory in the next 60 days.

Ford car dealers are hard hit. There are eleven authorized dealers in the city. The local assembling plant has been closed almost entirely and the territory is being allowed but 40 cars monthly. Just when the Ford truck was getting well under way a shortage has arisen in this line that is serious. The scarcity of new Fords also is affecting the Form-A-Truck dealers, as that car was the most popular for use in connection with truck units.

The parts shortage is extremely acute. Some distributors are entirely out of certain parts. Where in the past they have been buying interchangeable parts from other dealers, the latter are now cutting out this business in fear of a shortage of their own. Making parts is difficult owing to inability to get materials. Castings are not to be had. The wholesale metal houses will not sell wire, nails, bolts or metal to passenger car dealers, because of government regulations. Dozens of repair jobs are indefinitely tied up because of lack of parts or materials.

The used car business appears to be the one bright spot. Dealers report it to be excellent since the announcement the government war tax will be based upon horsepower and not the original cost of the car, as was first proposed. If that had been put into effect it would have ruined the trade. Used car buyers are looking upon a horsepower tax kindly and are going ahead with their dealings upon the basis that the horsepower tax will obtain only for a year or two and it is only fit and proper that it should be assessed.

### Kalamazoo Dealers Observe Closing Order

KALAMAZOO, MICH., Aug. 16—Kalamazoo automobile and accessory dealers, garages, service shops and filling stations have signed the pledge to close business not later than 7 p. m. every day and remain closed from Saturday evening until Monday morning. The order went into effect this week, and during the first few days there was an exceptionally big rush of business. Accessory supply dealers are reported to have sold more than previously under normal conditions.

### Solves Flour Problem With His Car

BIDDEFORD, ME., Aug. 17—J. E. Plummer, a Civil War veteran of South Paris, Me., has solved the food and flour problem for his neighbors with the aid of his motor car, which he has attached to a flour mill that he has operated for some years.

For years he has worked the mill by hand, but when age began to creep upon him it was too difficult to turn the machinery. Yet his neighbors wanted their wheat and rye ground to make their bread, and Plummer, being a progressive veteran, and the owner of a motor car, decided that he had the power handy if it were hitched to the mill.

He secured some gear wheels and with a piece of shafting set the mill up beside his garage, arranging the car so that the shaft would mesh with the end of the crankshaft and he was ready for business. He quickly ground up his own stock and then had the neighbors bring their products along, and now he is singing a merry tune, for he makes enough to enjoy life with the high cost of living as well as pleasing his neighbors, who were wondering what they were going to do with the Hoover orders if they had to buy instead of grow their own cereals.

[What can old cars do in your territory?—Ed.]

## Truck Service Men Form Organization

**St. Louis Has New Trade Division to  
Meet Problems of New Auto-  
motive Branch of Business**

ST. LOUIS, Aug. 19—A temporary organization of the Commercial Car and Service Association of St. Louis was formed last week at the Chamber of Commerce and officers will be elected and further organization plans will be made at a luncheon at the Statler Hotel on Wednesday of this week.

The association probably will become a section of the St. Louis Automobile Dealers' and Manufacturers' Association, of which practically all dealers are members. Nine leaders in the trade attended the meeting. It was decided to open the association to those who give exclusively truck service, whether dealers or not. Each of those present is to draw a list of eligible firms in the city. Notice was given that one of the chief objects of organization was to arrange for a motor truck show. Several previous attempts to organize the truck dealers have given warning as to some points that must be avoided for the present and other stumbling points have been removed by agreement.

### Labor Situation Improving

WASHINGTON, Aug. 16—Curtailed production of non-war production is lightening the general labor situation, particularly in skilled trades, according to the Department of Labor. Reports received by the Department from Kokomo, Ind., show that the curtailed output of passenger cars is releasing a number of mechanics for war work. Similar reports from other sections, it is stated, show that conservation of man-power resources is being gained by reduction in the output of so-called non-essentials. The Department of Labor states that despite this improvement the general skilled labor shortage is still serious and can only be relieved by the transfers from non-war industries.

### Manufacturers to Be Put on General Staff Mailing List

WASHINGTON, Aug. 16—In order that the manufacturers may receive full information regarding the needs of the War Department, the General Staff will place manufacturers on the mailing list and send them requests for bids for the products which they are able to provide. Manufacturers, in sending in their names to the Supply Bureau, Director of Purchases and Supplies, General Staff, U. S. Army, Washington, D. C., should also include satisfactory references from banks or reputable business concerns, or from the chairman of the Local Regional Manufacturers Organization associated with the War Industries Board.

## Officers of the Oklahoma City Automobile Dealers' Association



Top row, left to right—John M. McClelland, McClelland-Gentry Co., director; James A. Knox, Knox Auto Co., director; S. S. Lindsay, Buick Motor Co., president. Lower row, left to right—Richard Carhart, Carhart Motor Co., director; George M. Sutton, Sutton Motor Co., director; A. E. Reid, Oklahoma Chalmers Sales Co., vice-president; W. H. Vesper, Vesper Automobile Co., director



## Prominent Tradesmen Assume New Duties

### Resignations and Promotions Place Workers in New Places

William H. Armstrong, for eight years holding executive positions in the Mitchell Motors Co., Racine, Wis., and its predecessor, the Mitchell-Lewis Motor Co., has resigned as secretary and treasurer of the company to take the active management of the Armstrong Foundry Co., Racine, the recent re-organization of the, Holtbrook-Armstrong Iron Co. of that city. Armstrong has been elected president.

Norman H. Halliday, who has built up the New England branch of the International Truck Co. in New England, has been sent to Kansas City for a two months' stay to put the branch in that territory on a paying basis.

W. F. Winkleman has resigned as special representative for the Liberty Motor Car Co., Detroit, and is now associated with the Heath-Duplex department of the McCord Mfg. Co., Inc. He has been identified with the automobile industry for the past 12 years.

George V. McMahan, who was sales manager of the Detroit branch of the Remy Electric Co., has been promoted to assistant general manager of the Remy Electric factory at Anderson, Ind.

L. W. Coppock has been appointed general engineer and chief in charge of production of the Lane Motor Truck Co., Kalamazoo, Mich., succeeding Harvey M. Stewart, who recently resigned. Coppock was actively interested in the organization of the United Truck Co., Grand Rapids, and the Higrade Truck Co., Harbor Springs, Mich.

Frank Jay, who represented the Stanley Motor Car Co., at Chicago, for many years as its Middle Western representative, has removed to Newton, Mass., where he now has an important executive position at the factory.

W. C. Anderson, manager of the Ford assembly plant in St. Louis, has been transferred to Chicago, following the turning over of the St. Louis building to the quartermaster's department of the U. S. Army. Anderson will have charge of the assembly plant in Chicago, from which deliveries of Ford cars will be made to St. Louis dealers. W. M. Johnson, a Ford dealer, will have charge of the office maintained in St. Louis, as assistant manager.

J. M. Dempsey, formerly with the Standard Tire & Rubber Co., Boston, has recently been appointed sales manager of the Cincinnati Specialty Mfg. Co., Cincinnati, manufacturer of the Automatic Extension Reel.

Leslie F. Smith, for the last two years manager of the Newark branch of Willys-Overland, Inc., left for a month's rest, at the end of which he will take up new work in the automobile field.

J. E. Nield, formerly of the Hudson and Saxon companies, has been elected second vice president of the Trego Motors Corporation, of New Haven, Conn., of which he has been manager for some time.

Wallace C. Hood, formerly general sales manager of the King Motor Car Co., has joined with James Foster in Foster-Hood Sales & Service Co., Detroit, conducting a garage.

L. Clyde Smith has been appointed assistant general manager and treasurer of the Detroit Weatherproof Body Co., Pontiac, Mich. He recently disposed of his interests in the Detroit Welding & Mfg., Detroit Electric Welder and Burns Starter companies.

C. A. Spear has been appointed New York State Division Sales Manager for the Selden Truck Sales Co., Rochester, New York. He succeeds L. S. Hallowell, who is to become affiliated with the Philadelphia Selden Sales Agency.

W. J. (Bill) Slater has resigned as pneumatic tire sales manager of the Firestone Tire Rubber Co. to become general sales manager of the Williams Foundry & Machine Co., Akron.

E. S. Lee, Jr., sales manager of the United States Motor Truck Co., has entered the service as first lieutenant in the Motor Transport Service Division. He is stationed at present at Camp Holabird, Maryland.

W. O. Kennington, who was assistant chief engineer of the Remy Electric Co., Detroit, at the time of the outbreak of the war, has returned to Detroit from the war front, where he is connected with the British Air Ministry.

J. B. Bieller has been appointed special representative of the truck tire division of the Republic Rubber Corporation, with headquarters in Cleveland, O.

### Ford Sues a Dealer

MILWAUKEE, Aug. 17—The Ford Motor Co. has filed suit in the Circuit Court at Milwaukee against the Lippow Cycle Co., 704 North Avenue, to force it to remove a sign announcing the sale of Ford accessories and supplies. The Ford company claims the Lippow company is using the Ford trade-mark illegally.

### Wages Increase 7.1 Per Cent in Car Industry

WASHINGTON, Aug. 16—Wages in the automobile manufacturing industry increased 7.1 per cent for the manufacture of May, 1918, as compared with the manufacture of April, 1918, according to the reports of 48 factories. The number of employees for the same period remains approximately the same, with 114,979 employed in 48 factories in April, 1918, and 114,944 in May, 1918, a decrease of less than one-tenth of 1 per cent. The wages paid by the 48 companies to 114,944 employees in May, 1918, were \$3,015,637.

Forty-seven automobile companies reported 120,000 workers in May, 1917, as against 114,745 workers in May, 1918, a decrease of 4.5 per cent, while wages increased from \$2,773,654 for the manufacture of May, 1917, to \$3,011,044 for May, 1918, a wage increase of 8.6 per cent, or a total wage increase, counting the decrease in workers, of 11.1 per cent for May, 1918, as compared with May, 1917.



## De Palma the Shining Star at Sheepshead Bay

### Wins All Events and Breaks World's Records—Mulford in Second Place

#### TWO MILE EVENT

Driver and Car	Time	Points
1 Ralph De Palma, Packard....	1:05.60	6
2 Dario Resta, Resta.....		5
3 Ralph Mulford, Frontenac....		4
4 Arthur Duray .....		3
Louis Chevrolet, Frontenac, out with broken crankshaft.		

#### 10-MILE EVENT

1 Ralph De Palma, Packard....	5:23.80	6
2 Dario Resta, Resta.....		5
3 Ralph Mulford, Frontenac....		4
4 Arthur Duray, Frontenac....		3

#### 20-MILE EVENT

1 Ralph De Palma, Packard....	10:51.60	6
2 Dario Resta, Resta.....		5
3 Ralph Mulford, Frontenac....		4
Louis Chevrolet, Frontenac, driving Duray's car, out with broken valve.		

#### 30-MILE EVENT

1 Ralph De Palma, Packard....	16:31.20	6
2 Ralph Mulford, Frontenac....		5
Dario Resta, Resta, ran out of oil.		
Ira Vail, Hudson, car not working properly.		

#### 50-MILE EVENT

1 Ralph De Palma, Packard....	27:29.20	6
2 Ralph Mulford, Frontenac....		5
3 Dario Resta, Resta.....		4
Ira Vail, Hudson, out in sixteenth lap; car not working properly.		

**SHEEPSHEAD BAY SPEEDWAY, N. Y., Aug. 17**—Winning all the events of the International Sweepstakes and breaking four world's records was the enviable achievement of Ralph de Palma here to-day when he piloted his Packard to victory before a crowd of 50,000 people. The records broken are for distances of 2, 10, 30 and 50 miles. Six drivers entered the five events, which were for distances of 2, 10, 20, 30 and 50 miles. The winner of each event was awarded 6 points, the second 5 points, third 4 points and fourth 3 points. The driver securing the greatest number of points took first prize. The purse was \$27,000 of which each driver contributed \$2,000 and Harry Harkness, owner of the track the balance. The drivers and the points they won are as follows:

Driver	Car	Pts.	Prize
Ralph De Palma, Packard Special		30	\$17,000
Ralph Mulford, Frontenac Special		22	5,000
Dario Resta, Resta Special.....		19	3,000
Arthur Duray, Frontenac Special		6	1,000
Louis Chevrolet, Frontenac Special		0	.....
Ira Vail, Hudson Special.....		0	.....

De Palma drove carefully and consistently in all the events and usually kept just in back of the leader till toward the last when he would let his car out all the way and nose into the bank on the inside and reach the home stretch in the lead. It was to be noted that there was not a single stop at the pits by any of the contestants during the events for gasoline, water, tires or anything else

with the exception of the cars that broke down completely.

Chevrolet had hard luck from the very beginning as he broke his crankshaft when half way round the track in the 2-mile event and that put his car out of commission for the day. Duray very generously announced that Chevrolet could drive his car in the 20-mile event, but this worked a severe hardship on Duray as Chevrolet only drove it three laps when it went out with valve trouble and Duray was unable to participate in the 50-mile event. Vail did not enter his Hudson in the early events as he had been in a smash at Columbus and was unable to get his car working properly and he made a poor showing in the two events that he did enter. This was no reflection on the car or driver, but simply resulted from the impossibility of making repairs in the limited time. A comparison of the times made to-day with previous records follows:

Distance	Time	Previous Record
2	1:05.60	1:12.85 made by Resta last year.
10	5:23.80	5:24.80 made by De Palma July 28 at Chicago.
20	10:51.60	10:50.20 made by De Palma.
30	16:31.20	18:56.10 made by Aiken several years ago.
50	27:29.20	28:04.63 made by Resta last year at Sheepshead Bay.

### March for Rural Express

**MILWAUKEE, Aug. 19**—Alton J. March, head of the A. J. March Motor Truck Co., 215 Wisconsin Street, and president of the Milwaukee Automobile Dealers' Association, has accepted appointment as Wisconsin representative of the National Motor Truck Committee of the National Automobile Chamber of Commerce, and already is making preliminary arrangements for the establishment of Rural Motor Express lines in this state. March has enlisted the support and co-operation of the state and Milwaukee Councils of Defense, Milwaukee Association of Commerce, Milwaukee Chamber of Commerce, Wisconsin Highway Commission and numerous other organizations to work out a plan of operation to be put into effect immediately.

### Attention, Car Wreckers!

Editor Motor World: We are writing to you in hopes that you may be able to help us find a No. 23,099 differential case for a Monroe speedster, Model 16, serial No. 3261, with a Walker Weiss rear axle.

We have tried the Monroe Motor Co., Pontiac, Mich.; the Walker Weiss Co., Flint, Mich., and the Puritan Machine Co., of Detroit, and they all referred us to William Small Co., Indianapolis, which company can neither make shipment nor promise one. This car has been held up for nearly three months on this account, and we would be very grateful to you if you could help us find this part.—Kendallville Auto Sales Co., Kendallville, Ind.

## Ford to Fix No Price on Fordson Tractors

### Recommends Profit of Not Less Than 12½ Per Cent—All Territory Is Open

**NEW YORK, Aug. 16**—Complying with a ruling of the Federal Trade Commission several days ago, Fordson tractors, made by Henry Ford & Son, Dearborn, Mich., will be sold to dealers through distributors at a fixed price, but no re-sale price will be fixed by the Ford company, and the dealer can charge whatever price he desires. A profit of not less than 12½ per cent is recommended. There will also be no closed territory and any dealer can sell prospects wherever he finds them. However, where a dealer goes out of his own territory to pick the plums and does not cover his own ground thoroughly, a dealer will be put into his ground to compete with him.

### M. A. M. A. in War Service

**NEW YORK, Aug. 16**—In addition to general routine matters discussed at a meeting of the executive committee of the Motor and Accessory Manufacturers held to-day plans in connection with the possible activities of the War Service Committee were considered with the result that President C. W. Stiger has arranged to go to Washington for the purpose of conferring with the Chamber of Commerce of the U. S. A. as to the best ways in which this committee can assist the Government.

Early in September Stiger will call a joint meeting of both the Executive and the War Service Committees, probably at Detroit, to give effect to the results of his interview at Washington. It has not been definitely decided whether or not the Motor and Accessory Manufacturers shall have a permanent representative at Washington.

### Entries for State Fair Coming In

**DETROIT, Aug. 16**—Sixteen truck and passenger car manufacturers have signified their intentions of entering exhibits in the Michigan State Fair this year, which will be held Aug. 30 to Sept. 8. The names follow:

Dodge Brothers, Ford Motor Co., Olds Motor Works, Maxwell Motor Sales Corp., McCord Mfg. Co., Smith Form-A-Truck, Acme Motor Truck Co., Acacon Motor Truck Co., Nash Motors Co., Denby Motor Truck Co., Detroit Universal Truck Unit, Republic Motor Truck Co., Signal Motor Truck Co., Federal Motor Truck Co. and Frank Foster (Sterling Motor Truck Co.).

Seven accessory firms have also signed as exhibitors: L. Lawrence Welding Co., Specialty Sales Co., Lyknu Polish Co., Coffield Tire Co., Irwin Tire & Repair Co., Security Auto Theft Signal Co. and Presto Cloth Co.

Specifications  
of the  
Leading Cars

# MOTOR WORLD GUIDE

Revisions Are  
Made in Table  
Every Week

Model	Motor	S. A. E.	Ignition	Carburetor	Starting	Clutch	Gearset	Wheelbase	Trim	Rims	2- Passenger	5- Passenger	7- Passenger	Coupe	Sedan	Limousine	Detachable Top
ABBOTT 6-62	6-31x41 29.4 Remy			Stumg	Remy	DD	3	122	34x4	SS	\$1875	...	\$1875	...	\$2375	...	...
ALLEN Series 41	4-31x5 22.5 Conn			Stumg	A-Lite	D	3	112	32x3	SS	\$1145	\$1195	...	\$1395	1395	...	...
AMERICAN 24	6-31x5 23.4 A.Kent			Zenith	West	DD	3	122	32x4	SS	1645	1595	1695	...	...	...	...
ANDERSON 20	6-31x41 25.3 Conn			Zenith	West	DD	3	120	32x4	SS	**1465	...	...	...	2185	...	...
400-F	6-31x5 23.4 A.Kent			Stumg	West	DD	3	120	32x4	SS	**1925	...	...	...	...	...	...
APPERSON 8-18	8-31x5 33.8 Remy			Johnson Bijur	DP	3	130	34x4	SS	(32x4)	12850	...	(2800)	...	4250	4600	...
Anniversary											3650	...	...	...	...	...	...
AUBURN 6-39-B	6-31x41 25.3 Remy			Rafid	Remy	DD	3	120	34x4	SS	1445	1445	...	...	...	1695	...
6-44	6-31x5 29.4 Delco			Rafid	Delco	DD	3	131	35x4	SS	1765	1765	...	...	2650	2085	...
AUSTIN 18	12-31x5 39.6 Delco			Stumg	Delco	D	6	142	34x4	QD	3750	3750	4000	4550	5000	5250	...
Hy-King	4-31x41 22.5 A.Kent			Zenith	Dyneto	D	3	114	31x4	QD	1150	1150	...	...	...	...	...
BELL 18	4-31x41 22.5 A.Kent			Zenith	G & D	DP	4	121	32x4	QD	2600	...	12650	...	4100	4000	...
BIDDLE H	4-31x5 22.5 Eisman			Zenith	West	DP	3	118	32x4	QD	...	1785	...	...	...	...	...
BOUR-DAVIS 18B	6-31x5 29.4 West			Stumg	West	DP	3	118	32x4	QD	...	1680	...	...	...	...	...
4-31x5 22.5 West				Rafid	West	DP	3	118	32x4	...	...	...	...	...	...	...	...
BREWSTER 6-4	4-31x5 25.6 Bosch			Zenith	U.S.L.	C	3	125	34x4	SS	7200	7700	...	8300	8400	8500	...
BRISCOE 24-24	4-31x5 16.3 Conn			Buick	A-Lite	C	3	104	30x3	C	885	885	...	...	...	...	...
BUICK 6-34-35	4-31x41 18.2 Delco			Marrel	Delco	DP	3	106	31x4	C	795	795	...	...	1185	1845	...
E44-45	6-31x41 27.3 Delco			Marrel	Delco	DP	3	118	34x4	SS	1265	1265	...	11605	...	1265	...
E44-46	6-31x41 27.3 Delco			Marrel	Delco	DP	3	124	34x4	SS	...	...	...	...	2175	...	...
E49	6-31x41 27.3 Delco			Marrel	Delco	DP	3	124	34x4	SS	...	...	...	...	...	...	...
CADILLAC 37	8-31x5 31.2 Delco			Own	Delco	D	3	125	35x5	SS	3220	3220	3220	...	...	4395	...
CASE 11	6-31x5 29.4 West			Rafid	West	D	3	125	35x4	SS	1875	1875	1875	...	**2375	...	...
CHALMERS 6-30	6-31x41 25.3 Remy			Stumg	West	DP	3	117	32x4	SS	1585	1585	1615	1975	2250	2925	...
6-30											...	...	...	...	...	...	...
CHANDLER	6-31x5 29.4 Bosch			Rafid	West	DP	3	123	34x4	SS	11795	11875	1795	2395	2495	3095	...
CHEVROLET 60	4-31x4 21.7 Remy			Zenith	A-Lite	C	3	102	30x3	C	715	735	...	1150	1185	...	...
FA 18	4-31x5 21.7 Remy			Zenith	A-Lite	C	3	108	32x4	SS	995	995	...	...	1475	...	...
D 870	8-31x41 36.4 Remy			Zenith	A-Lite	C	3	120	34x4	SS	11550	1355	...	...	...	...	...
COLE 870	8-31x41 39.2 Delco			Stumg	Delco	C	3	127	35x5	SS	2595	12595	2595	3795	3595	...	...
COLUMBIA 6-40	6-31x41 25.3 A.Kent			Stumg	W.Lord	DP	3	115	32x4	...	11495	1450	...	...	2395	...	...
COMET C-50	6-31x5 29.4 Delco			Miller	Dyneto	D	3	125	33x4	...	...	1685	...	...	...	...	...
COMMONWEALTH 4-40	4-31x5 19.6 A.Kent			Carter	Dyneto	DD	3	115	32x3	SS	1995	1095	...	...	...	...	...
CROW-ELKHART CE-36	4-31x5 19.6 Conn			Zenith	Dyneto	D	3	114	32x3	SS	1095	1155	1095	...	1435	...	...
CUNNINGHAM 8-31x5	45.0 Delco			Stumg	West	D	3	132	35x5	...	...	...	...	...	...	6400	...
8-31x5											14000	15100	...	...	...	...	...
8-31x5											16000	16400	...	...	...	...	...
DANTELS 8-31x5	23.8 West			Zenith	West	D	3	127	34x4	QDR	3500	3500	3500	...	...	...	...
DAVIS 8-31x5	25.3 Delco			Stumg	Delco	C	3	119	34x4	...	...	1635	1635	...	2000	...	...
E. I. J. I.	6-31x5 29.4 Delco			Stumg	Delco	C	3	125	34x4	...	...	2000	2000	...	...	...	...
DEKLE FLYER 1885	4-31x5 16.9 Conn			Carter	Dyneto	D	3	112	32x3	SS	1095	1095	...	...	1375	...	...
4-31x5											...	...	...	...	...	...	...

**ABBREVIATIONS.**—"A. Kent," Atwater Kent; "A-Lite," Auto-Lite; "B. & Ball," Ball & Ball; "Conn." Connecticut; "G & D," Gray & Davis; "Eiseman," Leesee-Neville; "N. E.," North East; "Newcomb," Newcomb; "O-M," Owen Magnetic; "Ratid," Rayfield; "Smbg," Stromberg; "Splindorf," Splindorf; "Tittum," Tiltotson; "Ward Leonard," Ward Leonard; "D" Disk; "DD," Dry Plate; "Dry Plate," "C," Conc.; "Friction," G. Gearless; "CU," Control Unit; "Mag. Magnetic," SS Straightside; "QD," Quick Detachable Clincher; "QU," Universal; "R & M," Robbins & Myers. NOTE— $37\frac{1}{8} \times 3\frac{1}{2}$  r means that the rear tires are  $37\frac{1}{8} \times 3\frac{1}{2}$  and the front are smaller. Reversible, "JUR," Quick Detachable Clincher; "L.N." Leese-Neville; "N. E.," North East; "P. Plate," "P. Plate"; "WD," Wettinghouse; "W.L." Ward Leonard; "D" Disk; "DD," Dry Plate; "QU," Quick Detachable Clincher; "R & M," Robbins & Myers. NOTE— $37\frac{1}{8} \times 3\frac{1}{2}$  r means that the rear tires are  $37\frac{1}{8} \times 3\frac{1}{2}$  and the front are smaller. Reversible,

## Cars to Be Shipped on Rivers on Barges

### St. Louis Distributors Welcome Opening of Waterways System— And the Rates Will Be Lower

ST. LOUIS, Aug. 19—Motor vehicle distributors here are showing an active interest in the announcement that steel barges will begin operations on the Mississippi River next month, under direction of M. J. Sanders, Federal director for the Mississippi and Warrior Rivers.

This revival of river traffic to relieve the railroads of the Mississippi Valley was brought about by the determined stand taken by the St. Louis Chamber of Commerce, which has fathered the organization of the Mississippi Water Way associations and has won over the steady and high-powered opposition of the leading railroad financiers of the valley.

For three years a number of local distributors have used the river as a means of shipping motor cars and trucks to their dealers in the southern section of the valley, but the former boat traffic was unreliable and uncertain. The new service will be on schedule. Better than that, St. Louis and other cities on the river have constructed docks which will be fully capable of handling heavy machinery to and from the boats, and they are providing large storage depots. Also joint bills of lading with railroads will be issued and the river transportation will be approximately 25 per cent cheaper than rail transportation.

Business between this city and southern points has for a number of years been seriously impeded by railway congestion at southern points where cotton forms a heavy rail traffic. There seldom has been much trouble getting freight in and out of St. Louis, but its delivery at other points was uncertain for months. By next season it is promised that weekly and perhaps twice a week sailing of barges will be arranged.

### A New Fake Game

BOSTON, Aug. 17—The Boston Automobile Dealers' Association has been asked by Amos J. Shorey, manager of the New England Velie Co., to make an investigation of what seems to be a deliberate plan to victimize dealers in Boston. He has had a few instances in his own organization, and he has heard of some others where dealers were the victims, so he proposes to have the association take the matter up with District Attorney Pellitier to see if indictments on conspiracy charges can be brought about.

The plan worked out is for a man who has a contract that will cover about three months to go to a dealer and buy a truck on time payments. He makes his first payment as small as possible and then gives notes. When the first note comes due in 30 or 60 days he begs for an extension of time because of his contract being nearly finished and not having been paid anything.

About the time the extension is up the dealer gets a notification that one of his trucks is in a garage held for non-payment of gasoline, oil, repairs and storage. To get the truck he has to pay this amount, and the contractor meanwhile, who has not paid a cent for these things since he bought the truck, has had the use of the machine during the entire time at a cost of his first payment.

In one case it cost Shorey \$170 to get back a truck, and in another it was more than \$100. And in both instances the same garage owner called up and said he was owed the money. That made Shorey suspicious so he began asking some questions. He found another instance of a man who bought two trucks on time, used them on a big contract and kept hedging on his payments, and when near the end let the dealer get back the trucks. But with the clean up he made on the two smaller trucks he bought a big 5-ton machine, one of the most expensive on the market.

With the dealers association delving into the matter and its attorney working out a solution, either the swindlers will be rounded up or an attempt will be made to amend the law which now seems to make such people immune.

### Opens a Truck Line

COLUMBUS, Aug. 19—The Johnstown Auto Truck Line has been organized by L. P. Stephens, general manager of the Columbus, New Albany & Johnstown Traction Co., to be operated in conjunction with the traction property. The line has two trucks, one for passenger and the other for freight service. The trucks run from the terminus of the traction at Gahenne to Johnstown, and were paying propositions soon after their establishment.

## Nearly All Space in Jobber Exhibit Sold

### Drawings Held in Chicago, and All but Twenty Spaces Are Taken— More Applications on Way

CHICAGO, Aug. 15—Drawings for space in the Automotive Equipment Exhibit of the National Association of Automobile Accessory Dealers were held at noon to-day at the LaSalle Hotel. When the drawings were concluded all but twenty of the spaces on both floors of Medinah Temple were taken, and it was stated that additional applications are on the way.

Interested tradesmen, among them many space speakers, attended the drawing, which was conducted by the Exhibit Committee, consisting of L. P. Halladay, William K. Norris, R. R. Englehart, S. F. Beech and George L. Brunner.

The exhibit will be different in setting from the customary "show" the trade has seen in many cities during past years. It will have a distinct business atmosphere.

### 100 Per Cent Curtailment Stimulates Business

HARTFORD, CONN., Aug. 17—Announcement that automobile factories would have to be on a 100 per cent war basis by Jan. 1 next has had a decided stimulating effect on the local market. Some of the dealers report that backward orders have been secured. The difficulty throughout the season here as elsewhere has been to secure cars, and practically every dealer has sold all the cars he could get.

## Coming Events

Erie, Pa. ....	Tractor demonstration.....	Aug. 19-24
	Exposition Grounds.	
Herkimer, N. Y. ....	Tractor demonstration.....	Aug. 24
	Field Day, Charles A. Taylor in charge.	
Gates Center, Monroe Co., N. Y. ....	Tractor demonstration, J. L. Chase Farm, State Fair.....	Aug. 28
	Food Commissioner, D. C. Van Dann.	
Concord, N. H. ....	Tractor demonstration .....	Aug. 28
	County Farm Bureaus. M. C. Wilson, Director, Agriculture Extension, Dunham, N. H.	
Laconia, N. H. ....	Tractor demonstration .....	Aug. 29
	County Farm Bureaus. M. C. Wilson, Director, Agriculture Extension, Dunham, N. H.	
West Raleigh, N. C. ....	Tractor demonstrations .....	Aug. 28-30
	Farmers' Convention, College Farm. Dr. R. Y. Winters in charge.	
Campton, N. H. ....	Special tractor demonstration, Albamont Farms.....	Aug. 30
	H. G. Gulliver, Mgr.	
Cheshire, Conn. ....	Tractor demonstration, New Haven County Farm.....	Aug. 30
	Mr. Harvey, Mgr.	
Hartford, Conn. ....	Tractor demonstration, State Fair.....	Sept. 2-6
	Will F. Landon, Sec.	
Indianapolis, Ind. ....	Automotive Show, Indiana State.....	Sept. 2-7
	Fair, Indianapolis Automobile Trade Association; John Orman, Manager.	
Medina, Orleans Co., N. Y. ....	Tractor demonstration, State Fair.....	Sept. 5
	Food Commission. L. J. Steele	
Syracuse, N. Y. ....	Tractor demonstration, State Fair.....	Sept. 9-14
	J. Dan Ackerman, Secy.	
Madison, Wis. ....	Tractor demonstrations .....	Sept. 9-15
	State Fair. O. E. Remy, State Fair Secretary.	
Cincinnati, O. ....	District Convention, Ohio.....	Sept. 11
	Automobile Trade Association.	
Chicago, Ill. ....	Automotive and Accessories.....	Sept. 14-21
	War Exposition, Municipal Pier. H. V. Buelow, Managing Director.	
Canada .....	Tractor demonstrations .....	Sept. 17-18-19
Riverhead, L. I. ....	Tractor demonstration, County Fair.....	Sept. 17-20
	Harry Lee, Sec.	
Trenton, N. J. ....	Tractor demonstration, Trenton Fair.....	Sept. 30-Oct. 4
	Harry B. Salter, Supt.	
Dallas, Tex. ....	Seventh Annual Automobile Show.....	Oct. 14-17
	Texas State Fair.	
Dallas, Tex. ....	Seventh Annual Texas Automobile Show.....	Oct. 14-27
	Texas State Fair.	
Chicago, Ill. ....	Convention and Automotive Equipment Exhibit.....	Oct. 23-Nov. 2
	National Association of Automobile Accessory Jobbers.	



# MOTOR WORLD

for  
DEALERS, JOBBERS AND GARAGEMEN

Volume LVI  
No. 9

PUBLISHED WEEKLY  
NEW YORK, AUGUST 28, 1918

Ten cents a copy  
Two dollars a year



U. S. BALL BEARING MFG. CO., (Conrad Patent Licensee) CHICAGO, ILL., U. S. A.

## Both Drivers Level When Plowing

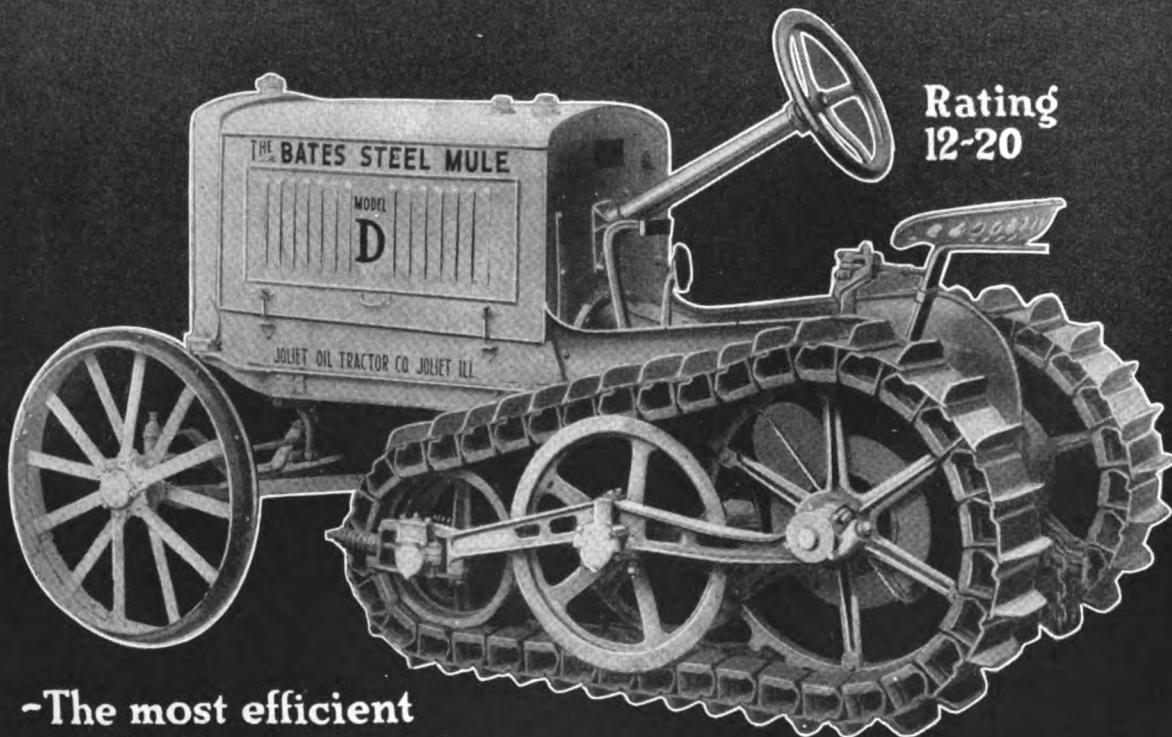
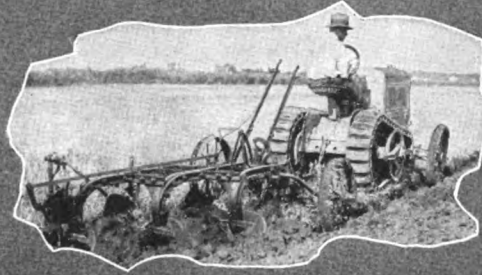
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# MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

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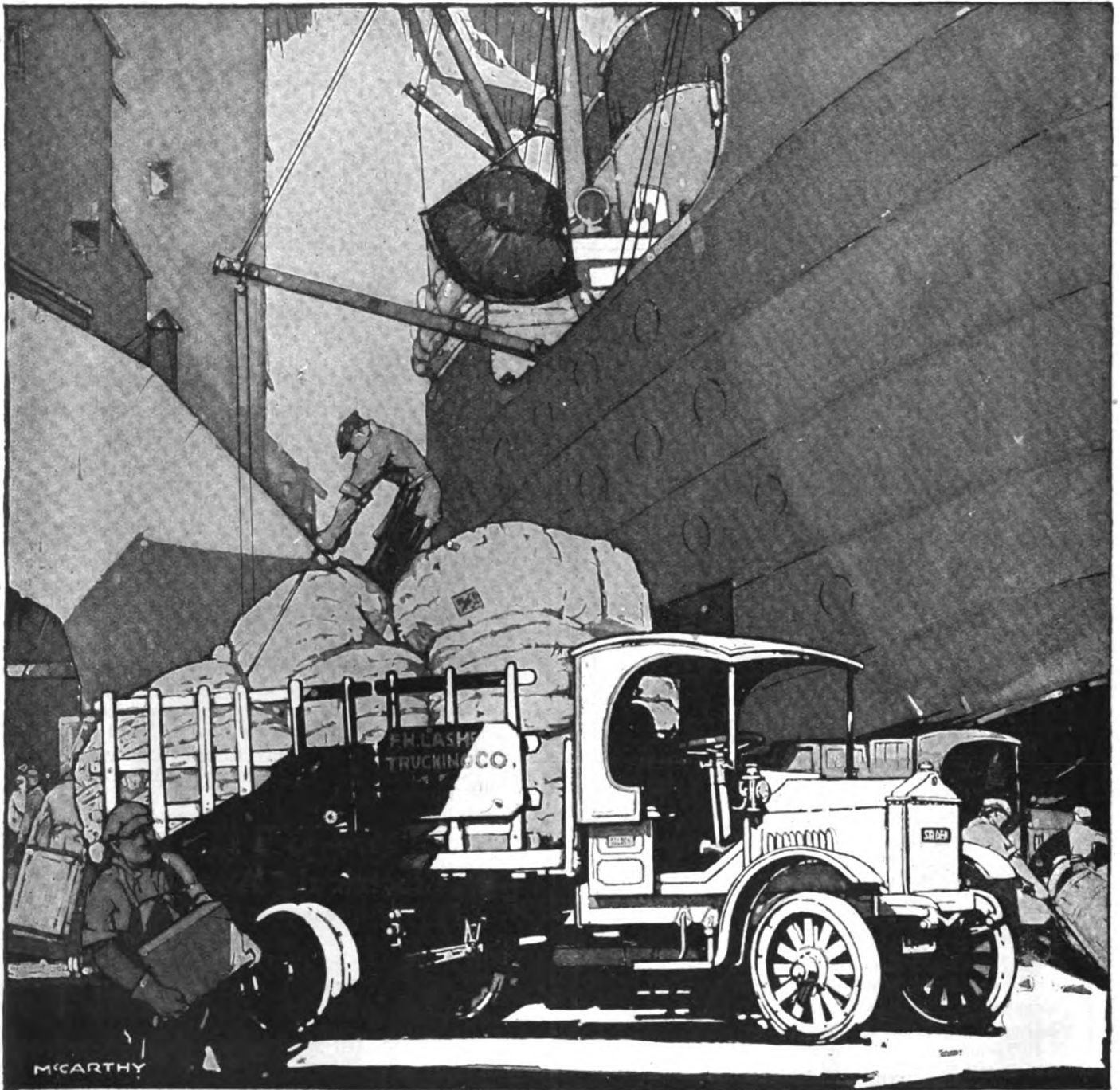
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# MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

Vol. LVI

New York, U. S. A., Wednesday, August 28, 1918

No. 9

## Restrict Passenger Car Manufacture 50 Per Cent for Remainder of Year

War Industries Board to Allow Makers to Produce During Last Six Months of 1918 One-Fourth Their Production During the Year 1917—Factories Again Urged to Get 100 Per Cent. on War Work by Jan. 1, 1919

WASHINGTON, Aug. 26.—Passenger-car manufacturers are to be permitted to produce during the last 6 months of 1918 one-fourth the number of cars they produced during the entire year of 1917. This is equal to half the production during the last 6 months of 1917.

This is the decision of the War Industries Board following conferences with the National Automobile Chamber of Commerce, representing the makers, and the National Automobile Dealers' Association, representing the dealers.

The order to restrict production is in the form of a letter from the War Industries Board and is signed by Edwin B. Parker, J. L. Replogle, George N. Peek and Alexander Legge, the special committee which was appointed to collect data on stocks of materials now held by makers and decide what disposition was to be made of these stocks and how much more materials should be given to the passenger-car industry.

### May "Match Up" Stocks

In consequence of its investigations, the committee has agreed to allow passenger-car makers to buy sufficient new materials "to match up its stocks now on hand," though "the production of passenger automobiles and all repair parts therefor shall not for the 6 months ending Dec. 31, 1918, exceed 25 per cent of the production for the calendar year 1917."

In its letter the War Industries Board states that it is in the public interest as well as in the interest

of the automobile industry that passenger-car manufacturers be assisted as far as possible, without interfering with the war program in the liquidation of stocks now on hand, and to this end the Priorities Division will accord a degree of preference in the obtaining of additional materials to all manufacturers who subscribe to the pledge of the Board.

### Continue Repair Parts Making

Although the letter states that the restriction of output applies to "passenger automobiles and all repair parts therefor," it is not believed that this applies to repair parts that may be needed for cars that have already been produced and which are in the hands of owners or dealers. It is believed, in other words, that this applies only to the normal stock of repair parts which a manufacturer would produce to take care of new cars going out of the factory and that parts for cars already running may be continued where necessary.

The letter of the War Industries Board covers the passenger-car production situation only insofar as the last half of 1918 is concerned. Although nothing definite is said about what is to be done with the opening of the new year, the Board reiterates its warning to manufacturers that they make all haste to convert their plants to operate 100 per cent on direct or indirect war work by Jan. 1, 1919.

In the mean time, dealers are optimistic and a better feeling prevails now that it is known definitely what the War Industries Board wants. It is not anticipated that there will be a great falling off in

the ranks of dealers, most of them feeling that it is better to worry along with a small number of cars and get ready for peace trade than to quite and start all over again. Following is the letter sent out by the N. A. C. C. commenting on the letter from the War Industries Board which is printed herewith.

#### To Passenger Car Manufacturers:

Enclosed please find copy of the letter of the Special Committee of the War Industries Board (Aug. 24, 1918) providing for certain priorities in connection with passenger car production for the six months ending Dec. 31, 1918, not in excess of 25 per cent of your full year's production for 1917. This makes a 50 per cent cut in production for the six months.

While some of the statements in the letter may seem drastic, you must appreciate the great problems of the War Industries Board and the vital necessities of the war program which must be cared for at any cost.

It is our understanding that paragraph 2 of the pledge does not limit the necessary production of repair parts for the up-keep of cars in use but only applies to repair parts that may be needed for the number of cars produced from July 1, 1918, to Dec. 31, 1918.

The new form of pledge which is to be signed will be sent as soon as prepared.

All applications for priority must be made to the Automotive Products Section, C. C. Hanch, Chief, War Industries Board, 18th and D Sts., N. W., Washington, D. C.

In our meetings with members of the War Industries Board they expressed appreciation of the importance of the automobile industry and showed the broadest possible spirit of co-operation with Mr. Chalmers and other representatives of the N. A. C. C.—National Automobile Chamber of Commerce, Alfred Reeves, General Manager.

#### Boston Hopes For the Best

BOSTON, Aug. 24—Plan for the worst; hope for the best.

That is the motto a number of Boston dealers have accepted regarding the future. Some are working out plans along the former lines and have told their salesmen that the outlook is poor and they could have leaves of absence or get other positions. Others are working on different lines. They are reducing overhead, but plan to stick to business and keep a good working force going, figuring that even if they have to handle used cars solely they can make a living on that or lose a few thousand dollars.

Meanwhile they argue that by keeping in business at a loss when the war ends and burdens lighten up, embargoes are lifted, etc., they will be in the middle of the stream ready to steer their craft along, while the fellows who quit will have to begin all over again at a much greater cost than if they stuck it out.

## The Letter From The War Industries Board

National Automobile Chamber of Commerce,  
7 East Forty-second Street,  
New York City.

Gentlemen:

Supplementing our letter to you of the 9th instant, we beg to advise that we have now received most of the reports embodying the data and information which we requested you to furnish us, and have given these reports careful study and consideration. From them it appears that the stocks of raw materials and of semi-finished materials in the hands of manufacturers of passenger automobiles, while large, are greatly unbalanced, with the result that these large stocks, aggregating approximately \$150,000,000, cannot be liquidated until they have been "matched up" with other materials necessary to manufacture the completed cars.

The conclusion has been reached that it is in the public interest, as well as in the interest of your industry, that it be assisted as far as practicable, without interfering with the war program, in the liquidation of its stocks now on hand; and to that end the Priorities Division of the War Industries Board will accord a degree of preference designed to accomplish this result to all manufacturers of passenger automobiles who will subscribe to a pledge to be prescribed by the Priorities Commissioner embodying in substance the following:

- (1) That the manufacturer will limit its purchase of materials, equipment and supplies to such as are absolutely necessary to match up its stocks now on hand.
- (2) That its production of passenger automobiles, and all repair parts therefor, shall not for the six months ending with Dec. 31, 1918, exceed 25 per cent of its production for the calendar year 1917.
- (3) That it will conserve and economize in every possible way its stocks of iron and steel and their products now in its hands, or that may come into its possession, and will release on request of the War Industries Board to such other manufacturer of passenger automobiles as may be designated by the said board such of its stocks as can be utilized by such other manufacturer, and which are not required by it for either the limited production above specified or for war work.
- (4) That it will from time to time render such reports of its activities, under oath, or otherwise, as may be called for by the War Industries Board.

The War Industries Board will, in carrying into effect the terms of the pledge herein provided for, use as a basis, as far as applicable, the sworn reports recently rendered it in pursuance of its request.

In justice to the passenger automobile industry we feel again impelled, as the situation appears to us now, to frankly repeat our statement to you of Aug. 9, that the urgent war requirements for iron and steel are so great that the probability of your industry procuring iron and steel after Jan. 1, 1919, for the manufacture of passenger automobiles is so uncertain that we again urge the members of your industry to as rapidly as possible utilize your facilities for the production of direct and indirect war requirements, not only in the interest of the nation, but in the interest of your industry itself. In such effort the members of your industry will have the active and wholehearted co-operation of this Board.

*Yours very truly,*

WAR INDUSTRIES BOARD,  
BY (SGD.) EDWIN B. PARKER,  
J. L. REPLOGLE,  
GEORGE N. PEEK,  
ALEX LEGGE,  
*Special Committee.*

#### Some Hartford Dealers Worrying

HARTFORD, Aug. 26—Some dealers here are much agitated over the curtailment of car production and seem prone to give up the ghost. Among other things, they have either cut out their advertising entirely or are doing so little

of it that the results are almost nil. That there is business to be had the better concerns prove while the minor ones show the other side of the situation. In some quarters there is sales apathy while in others the hot weather or the black clouds are not noticed in the least.

# What a Truck Prospect Thinks of Truck Salesmen

*"In One Case a Trailer Salesman's Mouth Dropped Open as Though He Heard a German War Bomb Explode When These Arguments Were Repeated"*

By Clyde Jennings

**T**HIS is going to be a story of how a lumber dealer sold a fleet of four 1½-ton trucks, seven trailers and one light truck, after a countless number of truck salesmen had failed to sell a single one. It represents a sale of roughly \$15,000. Worth while, is it not?

To be sure, he sold them to himself and he worked at the job something over two years, but he did not put in all of his time at it. He took it up as an odd-moment job and in the meantime he conducted the biggest lumber business in St. Louis and held the highest office in Hoo Hoo, the lumbermen's social organization, and took it off of the rocks and put on an up-and-going business.

Perhaps some truck salesman can learn something by reversing the story. Also by seeing how a man who is going to use the trucks looks at the proposal. The writer has sprung some of the expressions and comparisons the lumberman applied to trucks on truck salesmen and they appeared to be puzzled as to what he meant. In one case a trailer salesman's mouth dropped open as though he had heard a German war bomb explode when these arguments were repeated.

It has often been said that St. Louis was very slow in adopting trucks. Some ascribe this to the breweries, who liked the display of their fine horse teams and were willing to pay the bill for these as an advertisement. Others say it was because the truck salesmen were unable to convince the big men of the various trades that they should have trucks, and the smaller fry would not buy because the men who made more money than they were making did not use them.

Be that as it may, it is a fact that the lumber business has been more rapidly motorized since the Julius Seidel Lumber Co. took up trucks. And this story is why the Seidel company was not completely motorized until last June. In telling the story, Mr. Seidel was not critical of the motor truck salesman; he was not in the least fault finding. He did not appear to be surprised that no one had been able to analyze his business

wants. It was told merely as his experience, entirely without prejudice.

"I saw from the start," said Mr. Seidel, "that trucks would be the thing for the lumber business. Our yard did not need them as badly as some yards, because we had moved to a central location in the building district, where we have shorter hauls than the yards that remained in their pioneer locations. But we knew we wanted them.

"Our delivery bill is about \$15,000 a year. I knew all of the ins and outs of it, because in my younger days I was delivery clerk. Some things were apparent to me. I might mention these:

"The 5-ton load was the least to be considered for the general hauling.

"The 5-ton truck was not our solution, for the following reasons:

"There are places within our delivery district where any vehicle will get stuck at times. We could not afford to have a \$5,000 machine tied up in the mud while reloading.

"Often we are called upon to deliver lumber that must be unloaded by hand, and some times a place must be made for it. We could not afford to have a 5-ton unit tied up that long.

"We wanted elasticity, which could not be gained with the number of \$5,000 units we could afford to buy.

"So I decided to look into the trailer proposition. Without knowing anything about trailers, these facts appealed to me:

"A horse can carry 400 lb. but it can pull a ton. We had fewer teams than wagons, because we could leave the wagon where it might be needed and bring the horses, the expensive part of the equipment, back to continue work.

"Railroad men never consider placing their load on the engine. I asked a railroad man why he did not and he laughed and refused to answer the question. It was too foolish. Of course I knew that, and the question was just a feeler.

"I gained the impression from truck salesmen who called on me here that trailers were not much thought of by truck men, but that did not change my conclusions because I knew that the people most likely to make mistakes in gauging a business were those who went into it with a given, definite principle be-

fore them. The truck makers had gone into the business with the idea that a truck was a fixed unit, representing a team and wagon, or several teams and wagons in one. They had not accepted the bigger proposition as their principle—that of the railroad.

"We lumbermen have made the same mistake and to-day we are selling many substitutes for lumber because we did not look at our business with the same point of view that outsiders did. I thought perhaps I could see something the truck men did not.

"About that time I was traveling much for Hoo Hoo, and so as I went to the big cities of the country I visited lumber yards to see their delivery systems at work.

"My first real encouragement was in New Orleans, where steel-tired trucks are in use. But I saw that while steel-tired trucks would do on the streets there, the cobblestones of St. Louis would soon rack them to pieces. I knew this because of the wear on our wagons and the increased speed, load and steadier use by trailers were to be accounted for.

"Then I found a rubber-tired truck made by the Fruehauf Motor Trailer Co., of Detroit, and in use there. But they were lacking in the rollers for dumping the load. In Detroit rollers were not needed, because building material cannot be unloaded outside the property line and must be unloaded by hand.

"I had by that time decided upon my truck. It was to be a G. M. C. 1½-ton unit. I selected this because of its four-speeds. The size was determined because I had seen that in level cities there was no waste of energy with the 1-ton units. So in a hilly town we would need more. The speeds appealed to me because we all have seen how much easier it is for a team or a locomotive to start a load slowly and then use a greater speed once it is started.

"Now I bought one G. M. C. truck and two Fruehauf trailers. I found that the Pioneer Auto & Vehicle Co., of St. Louis, would equip the trailers with rollers, and we tried the experiment for a year with this equipment. We were so well satisfied that we have completely motorized our delivery service.

"Incidentally, I must add that we overcame the coupling objections by equipping all of our fleet with the Martin rocking fifth wheel, which solves the

matter of hills. The addition of a 2/3-ton Speedway truck to serve small customers was no problem. Nor were the extension wheels to be attached to the end of the trailers to handle timbers more than 24 ft. long.

"As soon as we had this fleet we established a motor yard in a corner of the lumber yard, where the truck brings the trailers and gets a loaded one. We have put in there a gas and oil station and no driver leaves the yard without a full tank. We could not afford to buy of the retail tanks here, there and everywhere.

"I have discussed this question with lumbermen who have the fixed units. I find these advantages:

"When one of our loads mires we uncouple the truck, come back and get another trailer and send a man to reload while the truck goes about its business of hauling lumber.

"We have a few mules left, which haul the trailers about the yard where they are loaded exactly as they are to go out. On the fixed unit plan the lumber is loaded on a

dummy wagon and then rolled onto the truck. We like ours best and we save a few seconds between the time required for coupling and the time required for rolling a load.

"When a customer is not ready to accept the lumber on arrival we leave the trailer and come back. If he is ready, we can dump the load as quickly as a fixed unit. We have practically seven 5-ton units.

"On short level hauls our capacity is limited only by the amount the truck can pull, not by the load it can carry. We may put on two trailers of light stuff.

"These are facts which, of course, fit this business only, as far as I know. I am not trying to change or reform the truck business. But it does sometimes surprise me that the truck business appears to fight the trailer-locomotive idea. Frequently we have telephone inquiries from delivery firms asking if we are satisfied with the trailers. We tell them that we are entirely satisfied. Then they tell us that a salesman for this or that truck had told them that we were sick

of the whole proposition, and if we could get rid of them we would buy truck units.

"In the lumber business, when a customer comes to us we find out what he wants, or if lumber is a new purchase to him, what he wants to do with it. If he knows what he wants, we give him a price on exactly that.

"If he wants to build something we find out what he wants to build, and if he has no specifications we prepare some for him, get them to suit him exactly, then give him prices on what is required. We try to make the specifications exactly fit the requirements. On bigger buildings the specifications are prepared by specification experts and we sell accordingly and do not offer suggestions unless we know positively, from experience, that a mistake has been made. We do not put up a package of lumber and go to the man and say if you want a three-room house that pile over there will cost you \$102, or if you want a seven-room house you had better take that pile, which will cost you \$1,002.

"We make up the bills after we see the specifications, not before."

## Where the Rural Motor Express Makes Good

*Sedalia Merchants and Farmers Have Been Quick to See Its Advantages and Have Profited*

SEDALIA, MO., Aug. 26—The distributors began to observe, about a year ago, that there was a possibility of serving the trade territory better, and increasing it, by starting a rural motor express line. The idea was a good one.

In October, 1917, the Warrensburg Wholesale Grocery Co. bought a small truck to use in local delivery, and to try out the rural route plan. A start was made with one customer at Leeton, who took about 200 lb. once a week. Since last October the business of the Warrensburg wholesaler at Leeton has increased to 3000 lb. a load, and trips are made nearly every day. There are now four customers in Leeton. The company is also gathering new trade from other towns within a radius of 15 miles, some of these towns having direct train service from Kansas City. Adrian Smith, a mere boy, has driven the truck on the country roads and in city delivery; he has not missed a trip, and the truck has not had to go to the repair shop.

The grocery company charges the retailer 15 cents per 100 lb. for delivery. This is a great saving for the grocer, who would have to pay two rates by railroad if he bought in Kansas City (goods having to be transferred) or the rate for a haul of nearly 200 miles from St. Louis. This rate is low, but not below cost. Each trip brings \$4.50 from groceries delivered, and the company saves the freight, which would be around \$2 on empties and cases brought back on each

trip. The gross revenue is therefore about \$6.50.

R. H. Lakey makes at least one trip a day with his small truck to towns within 15 miles, charging a flat \$5 for each load, except furniture, which, because of time in loading and unloading, requires a special price. He is developing a good return load trade in farm products, especially live stock. Local shippers are apparently about to embark rather extensively in motor truck delivery, judging from the earnestness with which they beg for help from Lakey and Smith. They can sell their trade in the small towns by telephone, deliver within two hours by truck—and give big city distributors a sharp tussle for business.

The Le Grand Garage, Sedalia, Mo., has had a large part in educating farmers and shippers in the use of trucks in that territory. The company uses chiefly Maxwell trucks. It charges 1 cent per bushel per mile on 10-mile hauls and over for wheat; 2 cents on shorter hauls. For hogs it charges 2 cents per mile per hundred. The load is frequently 5000 lb. The company figures to get \$2.50 an hour from its truck.

A comparatively large amount of livestock is hauled by truck in Missouri, the trade increasing rapidly. On some days, it is said, more than 100 trucks bring livestock to the Kansas City market. Many of these take merchandise to country stores on return trips. W. O. Stone, of Platte City, is one such trucker. He

comes in twice to four times a week, bringing, say, 20 hogs of 200 lb. apiece, or a couple of bulls, and takes back gas engines, farm machinery, merchandise. He carries a shovel in winter to dig out of deep snows, and misses no trips. There are dirt roads the entire 25 miles except within the city. He has paid for his Indiana truck with his earnings, and is planning to add another truck, as the city end of the business develops, with the organization of a return-load bureau at Kansas City. There are numerous bus and motor car lines carrying passengers between Kansas City and nearby towns, and all these have freight offered them frequently.

Perhaps the most striking illustration of the utility of motor truck lines is the case of Jefferson City. This city gets its chickens and eggs from St. Louis, over the Missouri Pacific, 125 miles. The town of Eugene, 24 miles from Jefferson City, is on the Rock Island Railroad. He ships 9 coops of chickens and 25 cases of eggs a day, 130 miles to St. Louis. Jefferson City has organized a return load bureau. A truck line is being established, financed by bankers and business men, between Jefferson City and Tusculumbia, county seat of Miller County. Tusculumbia is 10 miles beyond Eugene from Jefferson City, and Eugene is its nearest railroad point. This return load bureau and truck line is the first organization effort of the Highways Transport Committee of Missouri.



# How One Car Dealer Sells Farm Light

Advocates That It Be Handled Entirely Independent of Other Departments—Pinkham & Wright Distributes Around Hillsdale, and the Michigan Alamo Farm Lighting Co., Composed of Two Additional Men, Distributes in Michigan

WITH only a 60-day start in the farm-light and power business, Fred O. Pinkham has had his eyes opened to its possibilities. He has discovered how broad are its adaptations. He has learned that the sale of a lighting equipment does not terminate the transaction, but is really an opening wedge to further business.

But the surprising discovery he made was the fact that his product is not limited to only the farmers' use and that they are not the only prospects. Public buildings such as schools, churches, halls, etc., want the farm-light equipment; garages that do not have day power need it

and other fields are opening to the use of the equipment.

Pinkham is a partner of the firm Pinkham & Wright, Hillsdale, Mich., dealers for Ford cars. He thinks so well of the farm-lighting proposition that he has formed a company styled The Michigan Alamo Farm Lighting Co., and will distribute the outfits among dealers in Michigan, still retaining his Ford agency—this, only after having made a tour throughout the West, where many machines have been distributed. He wanted to see what they were doing in the hands of the users. He came back satisfied—no, we better say much enthused.

The Michigan Alamo Farm Lighting Co. is composed of F. O. Pinkham, L. A. Wright, E. T. Prideaux and Roy Hagerman. The latter has charge of sales distribution.

A suite of offices apart from the building occupied by the sales room has been leased and all business pertaining to the distribution of the farm light is transacted at these offices.

A series of two letters have been sent each of the following classes: All Ford dealers of the state, all implement dealers, electric supply dealers and other dealers known to be short of cars.

These letters were later followed by a broadside. A card file is kept and every reply is followed up in a systematic manner.

Hagerman with another man is now touring the state with Ford runabouts, on which are mounted in glass cases

FACTORY: ALAMO FARM LIGHT CO.  
HILLSDALE, MICH.

**MICHIGAN ALAMO FARM LIGHT CO.**  
HILLSDALE, MICHIGAN

*"The Sales Opportunity of the Decade"*

Dear Sir:

Today's problems are cutting the ground from under ordinary standards of the dealer's business.

A prominent automobile dealer found a way to turn his "war loss" into big, quick profit—by selling a farm lighting unit.

A worried machinery dealer banished the haunting fear of curtailed production, kept all of his road men and doubled his profits—by selling a farm lighting unit.

A competent authority charges that the American dealer is losing millions of dollars this year—dollars that might be put into bank accounts by taking on another product. Wide awake dealers who know how to meet changing business conditions are telegraphing and coming from long distances to sign up on the farm lighting proposition. A keen observer of conditions in America, says:

"The dealer is facing a real crisis. He has built a business around one single product or class of products. Production is suddenly curtailed. Profits gradually diminish. The situation calls for readjustment of methods and policies. To take on another sound product or class of products seems to be the only way out."

What does all this mean to YOU? An outline of the Alamo Farm Light Company's early summer advertising campaign and a map of the Michigan territory are on my desk before me. For this company not only have developed an unquestionably superior farm lighting unit—not only will become within the next eighteen months the largest exclusive farm light manufacturer in the world—not only pave the way for the dealer by extensive PERSONAL advertising—but offers the dealer, in a time of need, a product whose future is bound to parallel the Ford automobile.

Some of the Michigan territory is now available. None will be placed—nobody can obtain a foot of it—except upon personal interview. And I should like every dealer who now realizes that curtailed production demands a readjustment to know the real future of the Alamo farm light unit.

So I am willing to do this. Simply sign the enclosed card. I will make an appointment with you, let you see the Alamo unit in operation and will determine your ability to develop the territory in your vicinity.

Surely every dealer who realizes what limited production of his present product means will want to know the Alamo proposition.

You pay no money. You take no risk. Merely sign and mail the enclosed card TODAY.

Yours very truly,  
R. Hagerman

Mr. Hagerman: Date 1918

I realize that changing conditions must be met by the dealer if he wants to keep his business organization turning full-time profits into the bank. I believe I could efficiently handle another product with a real future. So I want to see your farm lighting unit and to learn your dealer's special proposition.

Name \_\_\_\_\_

Address \_\_\_\_\_

FACTORY: ALAMO FARM LIGHT CO.  
HILLSDALE, MICH.

**MICHIGAN ALAMO FARM LIGHT CO.**  
HILLSDALE, MICHIGAN

*"The Sales Opportunity of the Decade"*

Dear Sir:

"I wonder how the other fellow will solve this problem" is the question being asked by every automobile dealer in these days of limited production. What WILL he do?

Well, one thing is certain, he's NOT going to loaf. That would be poor business—and only good business judgment is going to pull a man thru these times of unlimited demand but limited supply. But—

He IS going to sell. His business is selling. His natural tendency is to sell. His organization is geared up to selling. He knows how to sell—

What? Why, the most logical thing, of course. Something his old prospects need. Something they want. Something that will keep their friendship. Something that offers a real future, a quick turn over and a GOOD profit. Something that can and will be supplied. And whatever it is, the very best in its class.

I am enclosing a short leaflet I know you will enjoy reading. It describes the logical thing—the very best in its class.

Can you really afford to let this opportunity slip? The other fellow is taking it—rapidly.

It's easy to learn all about it—just sign and mail the enclosed card TODAY.

RHM/WH Yours very truly  
The Michigan Alamo Farm Light Co.

Encl. 1. \_\_\_\_\_  
Manager.

Date 1918

Left, above—Letter sent out to all Ford dealers, implement dealers and supply houses, with a return postcard enclosed. Right, above—Letter No. 2 was sent to the same list. A small folder with a return card was enclosed

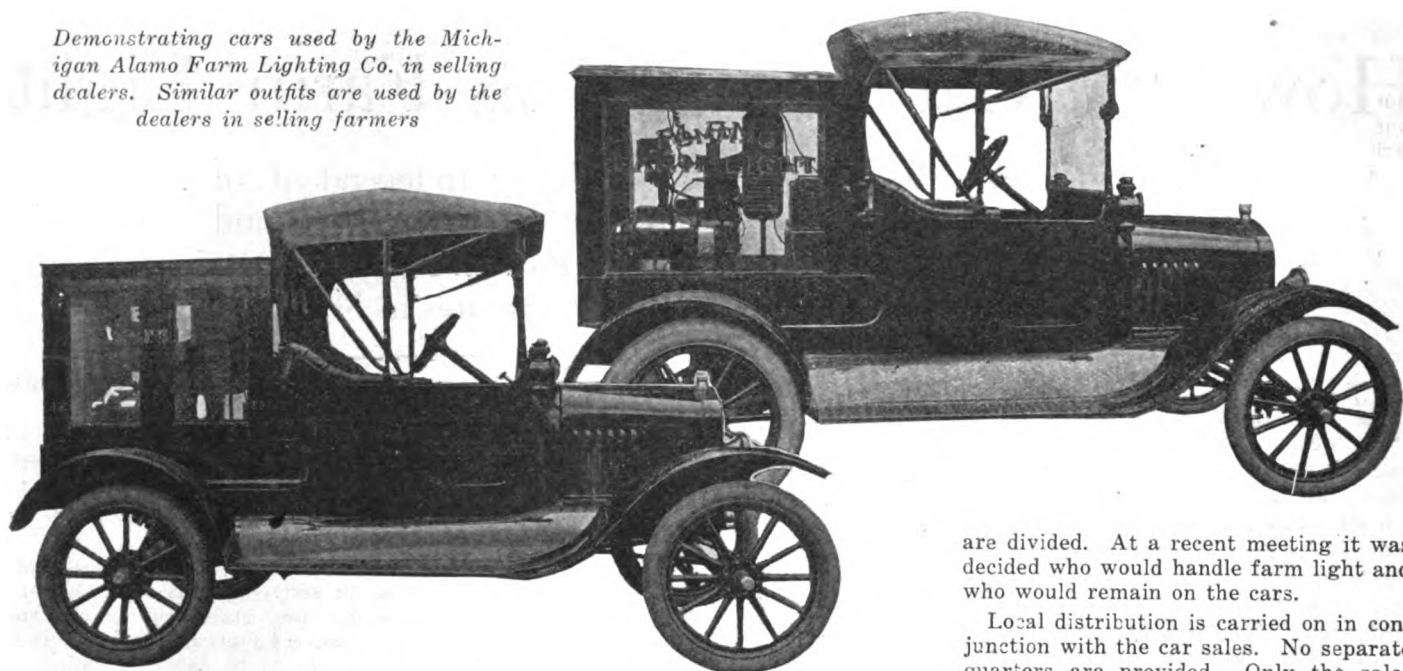
Dear Sir:

Your card just received. Am glad you too, are beginning to realize the future of the Alamo Farm Light unit. I will get over there just as soon as possible. If you don't want to wait, wire us at our expense when you will be in Hillsdale. We'll take you thru the factory and give you a royal good time.

Sincerely,  
Michigan Alamo Farm Light Co.

By \_\_\_\_\_

*Demonstrating cars used by the Michigan Alamo Farm Lighting Co. in selling dealers. Similar outfits are used by the dealers in selling farmers*



the outfits which are used as demonstrators for the dealers. When a dealer is signed up a similar demonstrating outfit is made for him, which serves in selling the farmers. The glass case alone costs \$25.

The Michigan Alamo Farm Lighting Co. has appointed Pinkham & Wright as one of the dealers. As a dealer, Pinkham has delegated one man from his automobile sales staff to take charge of the new business, as the former is thoroughly convinced that the added line

should be handled entirely separate from the car business and not be regarded as a side line, with the same men selling both cars and farm equipment.

"The proposition is big," says Pinkham, "and all of the salesman's time should be devoted to the one thing alone to be successful." He advises that salesmen handle one or the other exclusively.

At first Pinkham had car salesmen sell both lines, but this was not found satisfactory. A man cannot work so industriously nor efficiently when his efforts

are divided. At a recent meeting it was decided who would handle farm light and who would remain on the cars.

Local distribution is carried on in conjunction with the car sales. No separate quarters are provided. Only the sales force is independent of the car sales department. All office work is done by the same organization and demonstrations are made in the same building. It is planned later to have fixtures hung in the accessory display room. The profits, of course, are not as great as those found in the automobile business, but the percentage is slightly more after twenty outfits have been sold. It then reaches 20 per cent.

As stated before, the sale of a machine opens the way for the sale of multifarious other things on which



*The place of business of Pinkham & Wright, Hillsdale, Mich., agents for the Michigan Alamo Farm Lighting Co.*

greater profits can be made. The sale of the articles resulting from the placing of an outfit in a farmer's home will sometimes amount to greater proportions than the original outlay for the machine. After the machine is sold, demand for fixtures immediately follows, and the need of bulbs is obviously the next demand. This latter is a constant one. On both of these items a worthwhile profit is made, and both are articles for which a natural demand is created after the machine is sold.

Then there are other things which Pinkham is going to put in his sales room— $\frac{1}{4}$  hp. motor for water pumps, electric washing machines, electric irons, portable lamps, grills and other electric appliances, of which there are an endless number.

In sending out sales letters great care should be exercised that they reach the desired hands. It has been discovered by Pinkham that occupants of many farms are not the owners of them. "Always see that your letters reach live pros-

pects," warns Pinkham. "Get a good select list. The best plan I know of is to go to one farmer in one community and ask him for the names of all the

farmers he knows around him and find out if they own the land they occupy. Then go to another community and do  
(Continued on page 16)

CUSTOMERS ANALYSIS	
Name	
Address	
Age	
Business	
Reputation	
Appearance	
Appearance of Buildings	
Does He Own Auto? What Kind?	
Fair, Good, Prompt or Poor Pay	
Kind of Farm	
Hobby	
What kind of reception did he give you?	
Was he immediately interested?	
Easy or hard to convince?	
Impulsive or conservative?	
How many children?	
How many women in family?	
What questions did he ask?	
What objections did he raise?	
What line of argument did you use?	
What line of argument will be most effective in future?	

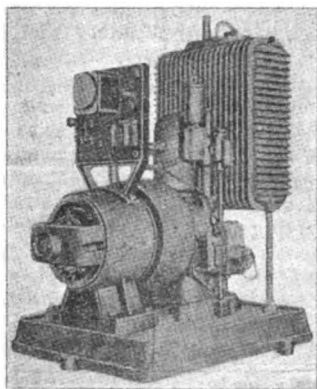
An analysis of prospects and customers is kept on these cards

# ALAMO-FARM-LIGHT

## Now Ready for Local Distribution

Alamo Electricity Gives Your Farm Home Modern City Conveniences

LIGHT	POWER
In every room	For household uses
Barn	Separator
Dairy	Iron
Garage	Fans
Implement House	Water System
Porch	Sewing Machine
Driveway	Churn
Lawn, Etc.	Vacuum Cleaner
	Washing Machine
	Grindstone
	Emergency Wheel, Etc.



The Simplicity of an Alamo Lighting System

SOME SPECIAL ENGINE FEATURES  
No poppet valves to grind, set or adjust  
No springs, cams or rods to adjust  
Clear itself for starting

Every Room, Barn, Dairy, Garage, Implement House, Porch, Driveway, Lawn.  
Electric Light and Power  
Simple and Powerful Engine  
The Alamo Unit is the only one of its kind that will start at once and run at full capacity without any adjustment.  
See Demonstrator at Our Garage  
We Close at 6 P.M. Except Saturday

Economical And Easy To Operate

## The Alamo Farm Light Unit is a Dependable

Makes electricity practical for every farm and suburban home. Complete plant and engine in one compact unit. No cranking—no trouble in starting. Powerful, dependable, safe. Furnishes strong, steady current to light all the buildings and run the usual household appliances. Before an electric light plant could be made entirely practical for the farm, an engine, which ordinary usage could not put out of order, had to be used. The life Super-Silent Motor, designed expressly for the Alamo Unit, is the ONE ENGINE that has stood this test. It is a four cycle engine, has been almost universally approved by mechanical engineers, as evidenced by its very general application to gas engine construction where durability, service is required.

Engine troubles come most often from the valves and other complicated mechanism that goes with the valve system. Their springs weaken, rust. They may not seat properly. Often they break. Any such fault puts the engine out of use until repaired.

## The Alamo Unit By Use Of A Rotary Sleeve Has Eliminated All These

The Alamo Unit engine pulls a 1,000 watt generator to its full capacity. It starts at the touch of a button. It stops automatically when storage battery or gets low in the tank or oil runs low in the crank case.

### Operates Silently

The engine of no other home lighting plant works as silently as the Alamo Unit. It has no overhanging parts on the shaft, the outer end of the generator is held by a double ball bearing bracket. Vibration is so slight that a special foundation is unnecessary. The generator is well ventilated and fully protected from the elements.

Are You Interested in a Farm Light

Mail us this coupon and we will send you our latest catalogue and price lists.

Name \_\_\_\_\_  
Mail Address \_\_\_\_\_  
PINKHAM & WRIGHT  
Hillsdale, Mich.

We have just been appointed local distributors of the Alamo Farm Light Plant. For the past year the entire output of the Hillsdale factory has been taken by western distributors. Hundreds are giving excellent service and satisfaction. We will have a demonstrator installed and on display in our garage Saturday. Call and let us show you why the Alamo is the best and most dependable farm light plant on the market.

# PINKHAM & WRIGHT

Alamo Farm Light Co., Manufacturers. Factory, Hillsdale, Mich.

ALAMO FARM LIGHT

For Light and Power

Sold by Hillsdale County's Leading Garage.

Made in Hillsdale County.

We will send our demonstration plant to your home on request. Let us prove the superiority of the Alamo unit over any plant on the market.

Quality—Service.

We Close at 6 P.M. Except Saturday

ALAMO FARM LIGHT

For Household Light and Power

Every Room, Barn, Dairy, Garage, Implement House, Porch, Driveway, Lawn.

Electric Light and Power

Simple and Powerful Engine

The Alamo Unit is the only one of its kind that will start at once and run at full capacity without any adjustment.

See Demonstrator at Our Garage

We Close at 6 P.M. Except Saturday

ALAMO Farm Light

HERE is the best lighting and power plant you have ever seen. It is the perfect plant that runs without noise and vibration. It is the only one of its kind that will start at once and run at full capacity without any adjustment.

All the Light—All the Power You Need

Come and see it. Compare it to every other unit with all others. Make no mistake, for you will see the difference between the Alamo and every other unit.

Made in Hillsdale.

This guarantees efficient and satisfactory service.

Sold by

Pinkham & Wright

Phone for Demonstration

Copies of newspaper ads used by Pinkham & Wright in the local paper

# Making the Tractor Attractive to the Dealer

How a Pennsylvania Distributer, Backed by the Factory, Is Pushing His Campaign at the Psychological Moment When the State Is "Boosting" the Motor-Driven Plow and a Wider Wheat Area Is Promised

## TWO WINNING METHODS JUST INTRODUCED

*Big Colored Highway and Railroad Signs to Supplement Publication Ads*

*Intensive Check-Up Scheme for Use of Demonstrator Experts*

**A** LONG automobile row in Philadelphia the passenger car and motor truck dealer and even the garage owner are sitting up and taking keener notice of the tractor as a paying proposition.

They realize that it will make up for the falling off in car production.

It will furnish an added line to bring the dealers in touch with car prospects—when there are any cars.

The garagemen wonder whether it wouldn't pay them as an experiment to get into the business. Only a few days ago a garageman with a good show window was inquiring where he could get a good tractor to display in his window.

Increased interest in selling campaigns on the part of distributors and dealers has been aroused through an announcement from Harrisburg. This says that a movement is under way in several counties for the taking over by groups of business men and farmers of abandoned tracts, to be plowed and put into wheat.

While the State has between thirty-five and forty tractors engaged in custom work, the supply is nowhere nearly equal to the demand for their use in the immediate vicinity of where they are working, to say nothing of more remote parts of the State.

Tractor concerns now regard this effort of the commonwealth more in the light of a free advertisement for them—the tractors employed are of various types of manufacture—for they serve to call attention in the most practical way to the need for motor-driven plowing, harrowing and threshing to supplant slow Dobbin.

Tractors in the Pennsylvania district—which includes parts of Jersey and Delaware—are owned by individuals, commercial organizations, chambers of commerce, farmers' clubs and a number of associations and the State.

Pressure for tractor work has been so great since the spring experiment of the commonwealth in plowing for neighborhoods that on July 15 the State Department of Agriculture arranged to start its second plowing schedule.

Notice has been sent out that farmers desiring the services of the State tractors should get in touch at once with their county farm bureau agents, or with the Department of Agriculture at Harrisburg, as in order to obtain a tractor a certain amount of work must be contracted for in advance.

At a recent meeting of the State Agriculture Commission, wider use of tractors in the State was urged and recommended and at that very meeting it was mentioned that the department's reports showed a big expansion of the area planted in buckwheat—to which the State tractors already have been paying some attention.

### Are Preparing to Give Service

All this bodes well for the tractor dealer. Automotive dealers handling various types of power-propelled vehicles are brushing up on service in preparation for making the tractor attractive, and are outlining plans for more extensive and intensive demonstrations, now that the opportunity seems at hand.

"We have three ways of demonstrating our product," said the Pennsylvania distributor of a well known tractor. "First, there is the demonstration by county agents through the State colleges. This usually is free in every sense, and the rural papers are almost without fail glad to insert notices of it without charge. No selling is permitted at exhibitions of this kind.

"Next, there is the competitive demonstration, whereby various dealers get together, affording an opportunity for association plans of various kinds. This we do not favor, as we have found it to be the least paying of the three methods. The farmer, who does not seem to be es-

pecially eager to buy on such occasions, possibly because he is confused by the many types of machines paraded before him, is often the only one to benefit, as he learns a great deal from experts and remembers it. Then when he gets ready to buy he may purchase some other make than those shown at a time when only one machine's excellence is held up to him. You know a good salesman in a store never shows too much at a time, for fear of swaying his prospect from the selling point.

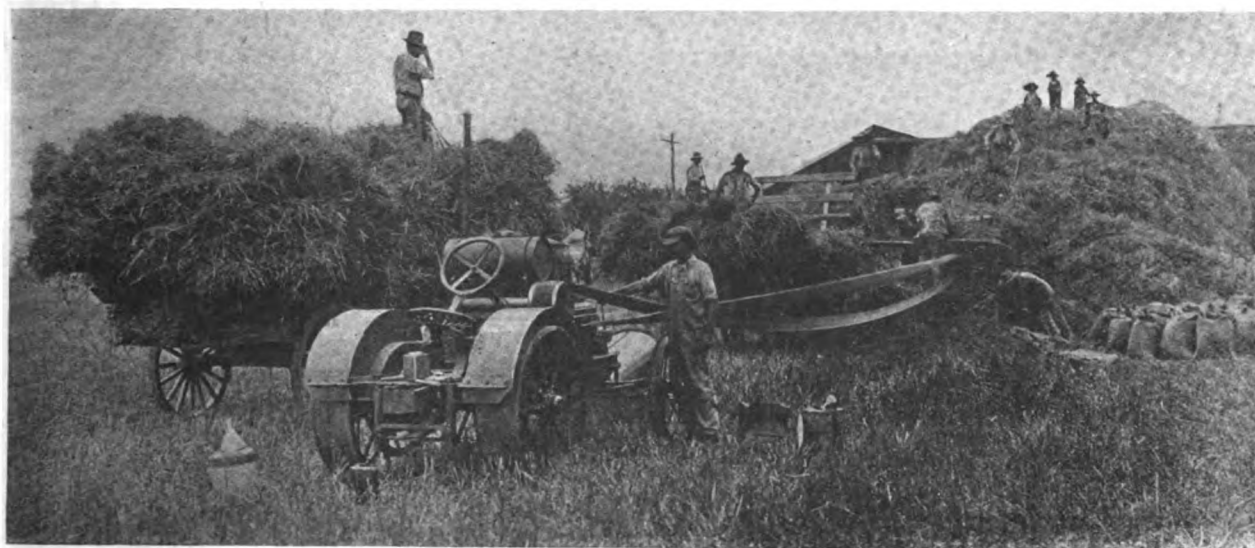
"Then there is the local demonstration, by the local dealer, who finances this himself, obtaining posters for the exhibition from the factory. A dealer certainly can concentrate the farmer's attention in this case, if he can't in the other two.

"Supplementing this we are trying something new, in that we are making a special effort, through attractive advertising by signboards, to reach the chap who doesn't see our magazine and newspaper ads or our demonstrations. These signboards we are placing along the railroads where they can be plainly seen from the Main Line, the Harrisburg division and the Maryland and New York divisions, and along such well-traversed thoroughfares as the Lincoln Highway, the Baltimore Highway, the Reading Pike, the White Horse Pike and the Woodbury Pike.

"These signboards are 10 x 60 feet and are in several colors, painted in the studio of a specialist in road signs. We expect this to work out well. You know the farmer's delight in reading signs and how fortunes have been made out of the patent medicine and screen door concerns which have thus emphasized their products on the rural mind while smearing advertisements of them on the barn and fence. But our advertisements are no smears—just 'loud' enough to put in their call.

"We have an improved method, in that we avoid the usual method of distributing to the various transfer points, the dealer





### REFILLING PENNSYLVANIA'S BREAD BOX WITH THE TRACTOR

*Tractors are not only figuring more prominently than ever in threshing, but war prices for wheat have had the effect of increasing the State's wheat acreage, which means more tractors on the farms*

then selling to implement dealers and other customers as best he may. When a dealer has paid for storage, for an expert, for shipping, for unloading and for

demonstrating—the way some houses make him do—there isn't much profit left from the sale of the tractor. The overhead eats it up.

"In our case the dealer pays us cash, unloads and stores in his own place and conducts his sales under the co-operative supervision of the distributor and factory, backed by local and national advertising of the character I have outlined. We give the dealer a chance.

"When we send out a demonstrator-expert, we have him submit a weekly report, which serves as a check-up sheet for the sales department. In it he describes the work done in each instance, including demonstrating, testing and repairing, for whom and where, giving the tractor's number and stating whether any part is defective and what it is. An itemized expense account on each job, for each day, is included, as is an account of the railroad fare.

#### Detailed History of Transaction Noted

"The date of finishing work, total hours put in, acreage plowed, seeded, or harrowed; amount spent for repairs; condition of machine; whether a certain kind of oil was recommended; whether man or dealer helped; if operator was competent; whether an expert had called before, and, if so, why; what he did; how many tractors the dealer sold and what make, as well as how they worked, are among the questions to be answered on the form.

"The usual plan of sale followed by our dealers is this, in brief outline: The purchaser pays down \$100 with his order and when delivery is made he pays on sight draft with arrival of bill of lading. Some dealers, however, in over-sold territory, prefer to let the purchaser try out his tractor, placing it on his land before being paid for, as an added inducement. We are getting our dealers to think tractors and to talk tractors and we co-operate in every way we can and in this plan the factory stands behind us."

### DEMONSTRATOR-EXPERT'S WEEKLY REPORT Used as a Check-up Sheet for Sales Department

Report of Mr. .... Home .....  
WORK ..... DONE .....

Demonstration.....Tractor No.....  
Testing.....Tractor No.....  
Repairing.....Tractor No.....

For whom.....at.....  
Owner of Tractor.....at.....  
If any defective parts, itemize same; giving name and number.

#### ITEMIZED EXPENSE OF EACH JOB

Monday at.....  
Tuesday at.....  
Wednesday at.....  
Thursday at.....  
Friday at.....  
Saturday at.....  
Sunday at.....  
Total.....

#### RAILROAD FARE

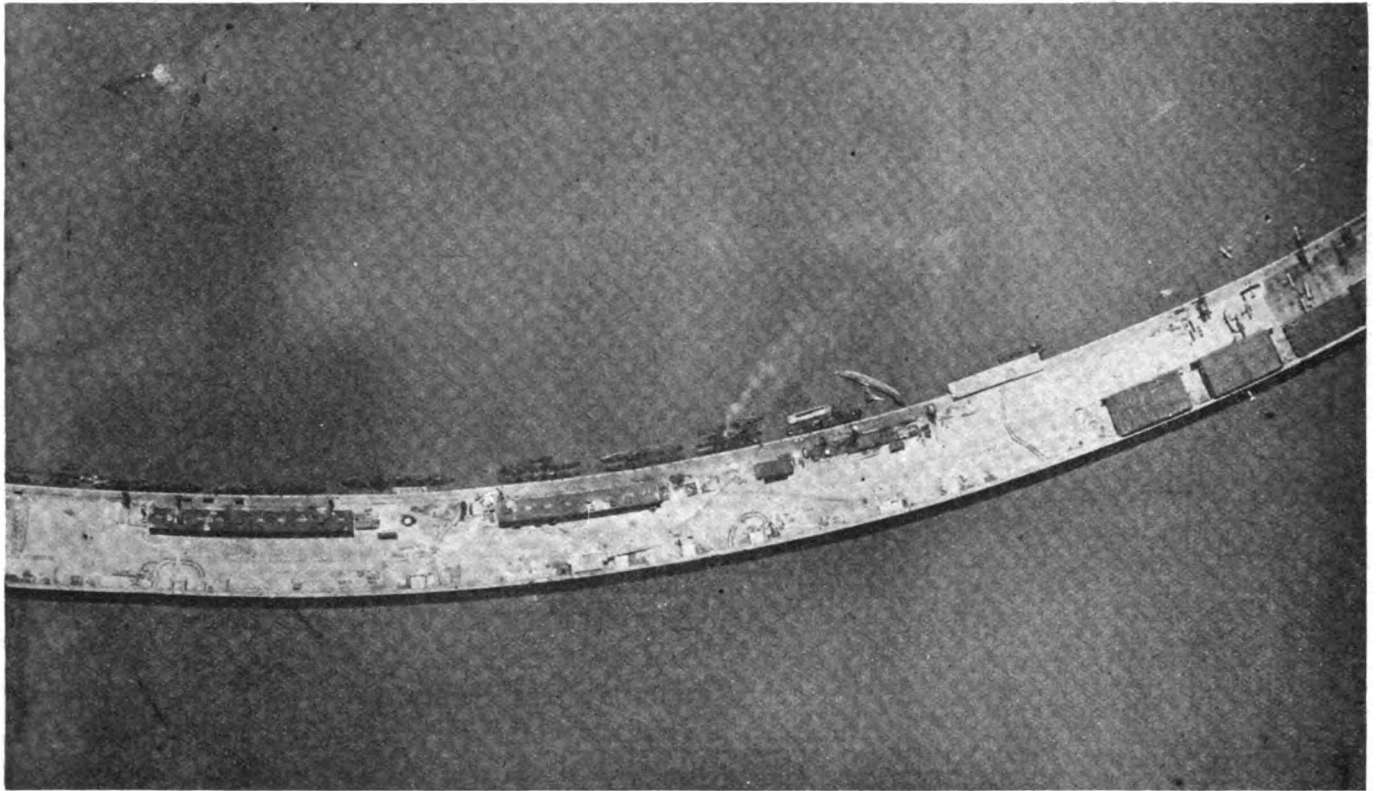
From .....to.....  
From .....to.....  
From .....to.....  
Total.....

Date finished.....191.....  
Give total hours time (including traveling) on each job.....  
Acres plowed.....Acres seeded.....Acres harrowed.....  
How much spent for repairs.....Condition of tractors.....  
Did you recommend kind of oil to use.....Did man or dealer help.....  
Is operator competent.....Has expert been there before.....  
If so, why and who.....What did he do.....  
How many tractors has dealer sold.....What make.....  
How do they work.....  
Dealers are expected to furnish transportation to all tractors you work on.....  
Did you post operator every way possible.....

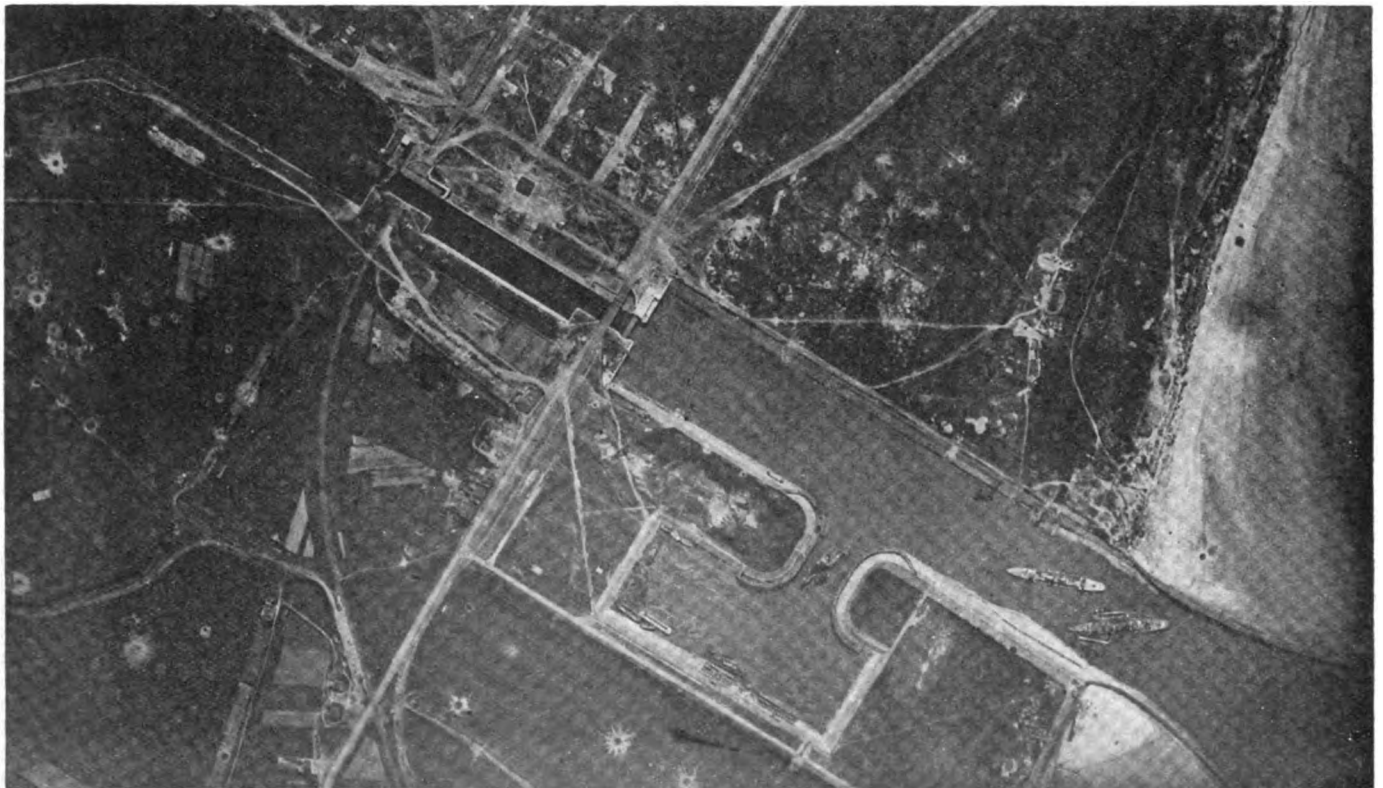
NOTE—Use regular expense sheets weekly, as no checks will be mailed from this report. Use reverse side for further report. (over)

# High Altitude Airplane Photographs

## *Of Some Interesting War Happenings*



*Zeebrugge Mole on the Belgian coast. The photograph, taken by the pilot in a Handley-Page machine, shows the result of his work. Lying in the water may be seen a destroyer on its side, sunk by a bomb from the airplane. The photograph also shows a series of German destroyers in the water at the edge of the dock and four seaplane sheds with seaplanes in the air over the water*



*Zeebrugge Harbor. This picture, taken at low tide, shows clearly the two British ships sunk across the channel, blocking it so that German submarines could not get to sea. A German dredge may be noticed working alongside one of the sunken vessels. All four of these photographs were taken at altitudes of from 17,000 to 20,000 ft.*



A view of a recent Northway tractor demonstration held at Westfield, Erie County

# Putting Over the Tractor

## IN AN EASTERN STATE

*Northway of Rochester, a Pioneer in the Field, Solved the Distribution Problem of the Tractor by Applying Merchandising Methods That Have Brought Him Success in the Marketing of the Automobile*

THE problems which confronted Thomas J. Northway of Rochester, N. Y., when he undertook to sell tractors in New York State were many and varied. New York State is essentially a state of small farms and small pocketbooks, with a surprisingly limited area available for tractor cultivation in proportion to the size of the state. Take a map of the state, block out the Adirondack and Catskill mountain regions, the thickly settled areas surrounding the large cities, and the remainder, after deducting the acreage given over to market garden and truck farms of from 3 to 10 acres, will give one some idea of the territory in which Northway works. A concrete illustration may be had by taking the case of Rockland County, in which there are, roughly, about 1000 farms, of which 500 are less than 3 acres in size. Only 20 farms in the county are larger than 100 acres.

With these conditions in mind it is easily discernible that the opportunities for tractor distribution in New York State, although presenting a great proposition, were hardly as favorable as in the middle Western States, where the great fields are often unbroken as far as the eye can reach. Realizing, however, the fact that something must be done to replace the great number of men from New York State who have entered the army or the navy, and who will not be available to aid in the production of foodstuffs until Berlin has been taken, Northway at once went to work.

Northway, who is one of the pioneer Ford distributors of the country, grasped at once the economic importance of the tractor, and from the start has handled the Fordson sales as a separate business. He knew little about the selling of tractors, but he did know motor car merchandising methods, and decided to apply these to the tractor. A tractor sales division was organized, in charge of E. G. Lee, with a corps of expert demonstrators and mechanics under him. The efficiency of this organization is evidenced by the fact that at the present writing

the distribution of the 1000 tractors originally allotted to New York State has been accomplished, and orders for double that number on a commercial basis have been taken.

This has been done without the means of any slapstick, circus poster advertising, and in such a constructive manner that there has been built up an organization of dealers who in their co-operative spirit are second to no sales organization in the United States. The campaign has been handled by correspondence almost entirely, and even the expense of special literature has been saved.

At recent meetings of the Northway dealers, held in Rochester and Albany, the orders which these dealers placed for tractors on a commercial basis exceeded even the wildest hopes of the Northway organization.

No attempt was made to clean up the state in two or three days, but intensive efforts were centered on securing as dealers men who were capable of handling tractors in carload lots, and in finding customers for these dealers. A special attempt was made to properly en-

thuse each individual dealer. Every Ford car dealer in the state, large or small, was given a chance to participate. Due to the heavy population of New York State, these dealers were often found so close together that it would be impractical for them to purchase the Fordson by the carload, and in these cases one live dealer was selected in each community and asked to line up his neighboring dealers, in order that their orders might be handled collectively.

One of the first steps taken by Northway was to arrange for a conference with Governor Whitman, through whose efforts 1000 tractors were set aside for the farmers of New York State to be distributed on a no-profit basis. This figures out about one tractor to each township in the state. The Governor and the State Food Commission have co-operated with Northway, and the Food Commission has advised and directed the sale of the tractors. In order that the greatest food production might result, an order form was devised in which the purchaser agreed to keep the tractor at work on his own farm until his own work was completed, and after this to work for his neighbors at reasonable prices. Through the county farm bureau agents the State Food Commission has seen that this provision was carried out.

As a preliminary measure each county farm bureau manager was asked to furnish the names of several up-to-date farmers in his community, who might be interested in the tractor, and who would be able to make the best possible use of it. At the same time letters were sent to every Ford car dealer in the state, explaining that the tractors were being placed without profit at the factory price of \$750, but that if their accompanying implements, the Oliver No. 7 plow and the Roderick Lean light automatic engine disc harrow, if sold with the tractors, would give the dealers sufficient profit so that they could afford to distribute a carload. A slip was enclosed asking the dealer to state the township covered on his Ford car contract.

Upon receipt of this information the dealers were instructed in the manner in which they were expected to operate, and supplied with a list of prospects in their territory compiled from the lists furnished by the factory, the county farm bureaus, the State Food Commission and the State Department of Agriculture. This plan has worked out so successfully that in most cases the small dealer has been able to go out and sell his carload of tractors, and collect the money before the carload arrived.

The Northway plan provides for a complete co-operation between the distributor and his dealer. If the dealer thinks necessary Northway arranges to have a man accompany the carload of tractors for the purpose of explaining to the dealer the operation of the tractor and the implements. This has been found necessary because New York State is so thickly populated that many of the dealers are city men, with no farm experience. This is done on the basis of



*Another view of the demonstration given at Westfield*

the dealer paying the expert's traveling and living expenses, while the expense of the man's time is borne by Northway.

One of the features of the plan is that absolutely no promises are made to the dealer, even to the extent of protecting him in his territory. This provision has allowed the dead wood to drop by the wayside, and has given the really big men a chance to develop. The effects of this are visible in the fact that every Fordson dealer in New York State is an enthusiastic Northway man, not because he has been tied to his distributor by an iron-bound contract, but because of the enthusiastic co-operation which has been extended to him.

The tractor demonstrations which Northway has staged and which have been held at the county farm bureau field days have been an important feature of the demonstration. These demonstrations have always been held in competition with other makes of tractors, and have been advertised solely by the State Food Commission. The interest in them has been great, and as many as from three to four thousand people have been present at a single demonstration. Wherever possible state officials have been present at these demonstrations to emphasize the fact that the distribution of the tractors is a war measure.

Either Northway or Lee has always appeared personally at these demonstrations and has mixed freely with the farmers and endeavored by personal contact and straight from the shoulder talk to impress upon the purchasers the superiority of the Fordson. At the second demonstration, held at Little Valley, Cattaraugus County, Lee personally took orders for seven carloads of tractors and turned them over to the local dealers.

One of the most recent demonstrations was held at Sennett, in Cayuga County, under the auspices of the State Food Commission and the Cayuga County Farm Bureau. Besides the Fordson, twelve other types of tractors were exhibited, as follows: Titan, I. C. H., Mogul, Huber, Case, Moline, E-B, Waterloo Boy, Form-A-Tractor, Happy Farmer, National and Chase.

At this demonstration the simplicity of operation of the Fordson was demonstrated in a novel manner. A corps of farmerettes were working in the vicinity, and one of these girls, a stenographer in the office of Henderson & Lathrop,

Ford car dealers of Auburn, was brought to the field as a surprise, and in the presence of the farmers instructed in the operation of the Fordson. The girl had had no previous experience in the use of tractors, but was able, after a few moments' instruction, to operate the machine successfully. It has been the habit at each one of these demonstrations to spring something novel in the way of operating the tractor, and this has assisted materially in the sales.

## How One Car Dealer Sells Farm Light

*(Continued from page 11)*

the same. In this way a list that is really valuable can be obtained."

When the days are short—in the wintertime—is the best time to sell farm lighting. A method employed by Pinkham is to go out with a demonstrating outfit late in the afternoon—demonstrations are more effective then—and after a little talk with the farmer he puts his device to work. He brings the farm light right into the farmer's home and lets him contrast it with that the farmer has been using—the dirty, unsafe, old kerosene lamps. Pinkham has found this very effective.

All installations are based on the number of outlets—\$2 each. This charge is in addition to the cost of the machine and battery. The buyer, however, usually attends to the wiring of his house himself, unless he prefers to have the dealer take care of it for him. Pinkham always stays with the farmer after a machine has been installed to see that he is thoroughly familiar with it. If any service is needed later he renders it without charge, as he would in the automobile business.

Thus far very few instances have arisen where service was needed. Nearly all farmers are familiar with gas engines. Therefore very little trouble is reported. Only where they are ignorant of the workings of the machine is difficulty likely to come up. On one occasion a farmer used linseed oil instead of lubricating oil. Only on minor cases such as these is it necessary for the dealer to be called back for service. Of course, the dealer keeps in constant touch with the user to see that he is kept sold on the proposition. Being an automobile dealer it is his instinct to do so.



# Don't Carry a Losing Department During the War

*Make Service and Parts Pay, Else They Will Make a Bad Situation That Much Worse*

By RAY W. SHERMAN

**B**EN DOYNE, the supplyman in Cal-lawassa—that is, the supplyman who got most of the business—wrapped up the drill that Reilly wanted but didn't hand it over right away. Ben sort of hung on to it and fussed with the string.

"Reilly," he said, after a moment's contemplation, "what am I going to do about some of these accounts of mine with the boys who seem to have trouble paying up?"

"I don't know. What's the trouble?"

"Oh," Ben covered the whole situation with a single blanket statement, "a lot of the dealers along the Row still seem to need stuff for their service work, but they claim they aren't able to take in money enough to pay promptly. They lay it all to the war, of course."

"If you need the money the only way I know is to go out and collect it," replied Reilly.

"That's a fine, fat solution," returned Ben. "Just as though I hadn't been trying to collect it. What's the matter with these fellows, anyway? I hate to stop selling goods to them and I CAN'T sell if I don't get the money. Fine mess I'm in, isn't it?"

"I'm sure I don't know what you'll do unless you go around and show them all how to get the money to pay you with," was Reilly's reply. "I'm able to pay for all my goods, am I not? And I'm not paying for it out of my bank account either. I pay out of current income. I MAKE the place pay."

"But how? What am I going to tell these fellows? What's the matter with them?"

"The principal trouble," Reilly explained, reaching for the drill and not getting it, "is that they are running on the old pre-war basis and they're not making their parts and service departments pay."

"There was a time, Ben, as you well know, when everybody made money selling cars. But few if any of us kept what we made. We used to over-demonstrate, we used to give away service, we used to waste right and left, and the result was that we didn't make all the profit we should. All of us were educated along those lines. Wasting profits came to be a habit; it was second nature. We didn't think we could do business any other way."

"And then came the war and its effects. Our car sales were decreased. Our costs

went up. The result was that we didn't have anything to carry our old service losses. The car sales profits used to carry the load, but when these profits were decreased there was no place to carry the loss—and so it stood out as the real loss it had always been. In a way the situation was beneficial because it showed a lot of us how much money we had been losing in certain departments."

"That's a good explanation, but how do I get my money?" demanded Ben. "How is a dealer going to make his service pay? If it will help me continue business and collect my accounts I'll send a man around to all the boys on the Row and show them how to make their service pay."

"It isn't difficult to explain," Reilly replied, "although it is a little hard to switch a business over to a new basis. But it can be done, it ought to be done and there is no time like these times to do it."

"As a starter the dealer should decide NOT to give away service. If he can't make that decision and live up to it he needn't start at all, because that is the FIRST step. He doesn't need to be a crank. There are certain friendly things he can do for a customer, but he doesn't need to do all this adjusting and tinkering that we have been doing for years. There is a need for sensible service—and it doesn't follow that sensible service can't be satisfactory to the customer, most of whose desires are for things NEW instead of FREE."

"After the dealer has made this decision to get real money for his service he should analyze his costs. That's another big trouble. Not enough of us know what our costs are. We just guess at it—and have gotten by—but no more. Each dealer should know exactly what it costs him to render an hour of service—and if he can't get his costs back with a profit he is destined to lose money."

"He should determine his overhead. This includes rent for the service quarters, salaries of non-productive workers, such as managers, clerks, porters and men engaged on company work."

"Then he must ascertain about how many hours of paid labor his shop turns out and divide this overhead among these hours at so many cents of overhead to each hour. If he later finds that the hours of paid labor increase or decrease he must make a readjustment so

that the overhead will be evenly spread over the hours of paid labor."

"If the parts department is operated as a separate division it must be handled in the same way. He must determine the volume of business done monthly and to this add a certain percentage of overhead to each dollar of business."

"He then determines what his labor costs him per hour in wages and to that he adds the overhead. He also adds a certain per cent for profit and then when he sells an hour of labor at this built-up price it represents so much profit for the department. If he does this he can't help making a profit, for the labor charge is simply wages plus overhead plus profit. The same thing applies to parts. If each part sold represents cost plus overhead plus profit the department is bound to pay."

"But where have they been losing?" inquired Ben.

"Probably most of the losses have been because the dealers have added a certain amount to each labor hour charge without knowing exactly whether the added amount was sufficient to carry the overhead and profit. And, to go back farther, the reason they didn't add enough was because they didn't know what enough was. The reason they didn't know what enough was was because they didn't make good enough analyses of their figures."

"Wherefore, one of the first things the dealer must do is get some fine accounting into effect and learn where he gets off. We have all talked about the unscientific business methods of the garageman, but when you take a look behind the scenes you find that some of our supposedly good dealers aren't as good as they might be so far as their cost figures are concerned. You know, there's a difference between accounting and cost analysis. A man may have fairly good accounting methods, as accounting goes, and still not be very good on his costs."

"And that, Ben, is about all there is to it."

"Well, believe me," declared Ben, "I'm going to set one of my bookkeeper boys at the job of helping some of these dealers to a basis where they can pay me some of what they owe me."

"It will pay you," said Reilly, and this time, when he reached for the drill, he got it.

*A Department of*

# BETTER MECHANICS

No. 80

## *Installation and Adjustments of the* Dyneto Farm Lighting and Power Plant

BY J. HOWARD PILE

THE Dyneto plant is furnished complete with engine, battery, generator and switchboard. All the units except the battery are mounted on a steel base which has to be attached to a firm foundation. The plant is supplied without the engine in cases where an engine is already available, but we will consider here that the engine supplied by the Dyneto company is to be used. The outfit is shipped complete, except for the battery, in one crate 26 in. wide, 44 in. long and 36 in. high, weighing 385 lb. The battery is in two separate crates which are provided with handles for convenience in handling.

### *1—Installing the Plant*

The plant should, if possible, be placed in as central a position as possible as regards the area to be lighted. By so placing it the current will go out from the plant on all sides and a minimum amount of wire will be used and there will be less liability to voltage drop from long wires which would have to be heavier than short ones.

The cellar of the house makes an excellent location, especially if the winters are very cold in the locality. On the other hand, it may be that the plant will be used more for power than light, in which case it should be placed as close as possible to the machines which it is expected to operate most of the time.

Wherever possible, the plant should be bolted down to a concrete foundation. The proper size for this foundation is 46 in. long, 18 in. wide, and it may be any height desired, but 6 or 8 in. will do very well. If the floor is of concrete of a reasonable thickness, the foundation may be molded right on top of it, chipping the floor with a cold chisel to make the new concrete stick to the old. If the floor is of wood or dirt, the foundation should go down into the ground about 1 ft. This can be very easily arranged by cutting a hole in the wooden floor and digging a hole in the dirt, placing the mold which is mentioned later above this. Thus the foundation will go below the ground and will also extend above it.

A wooden form to mold the concrete in

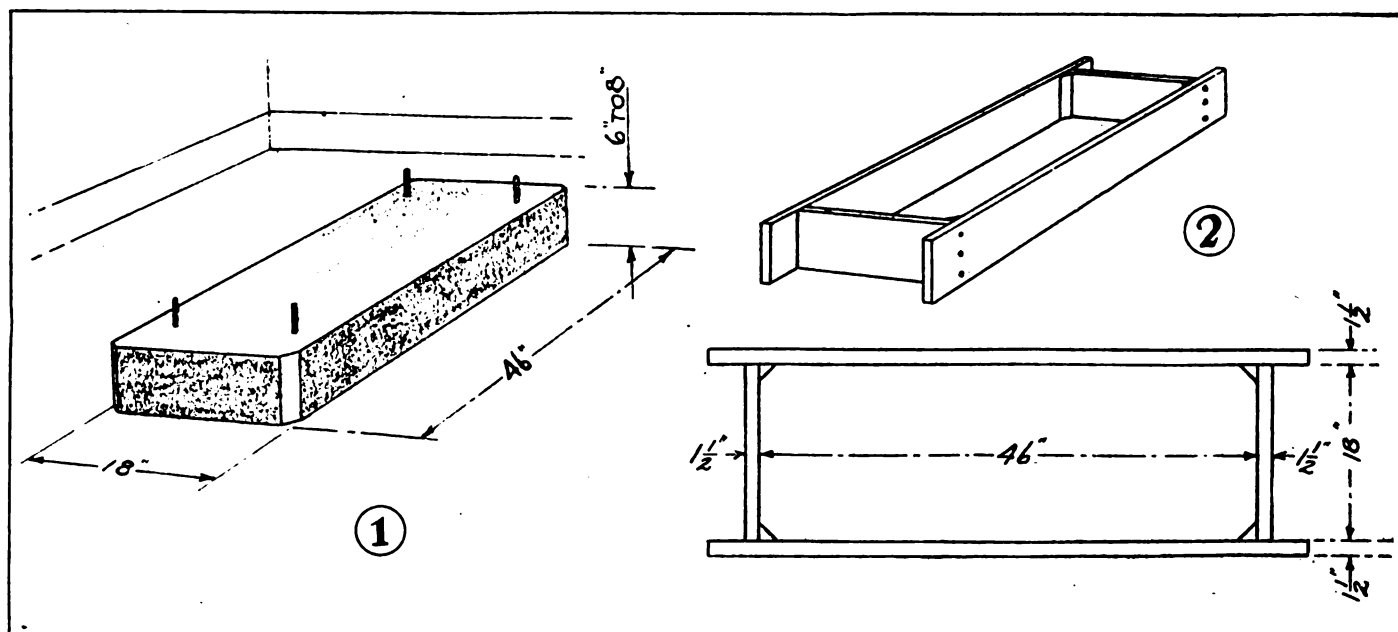


Fig. 1—Raised concrete base for Dyneto farm lighting and power plant. Fig. 2—Dimensioned drawing of wood frame for molding concrete base

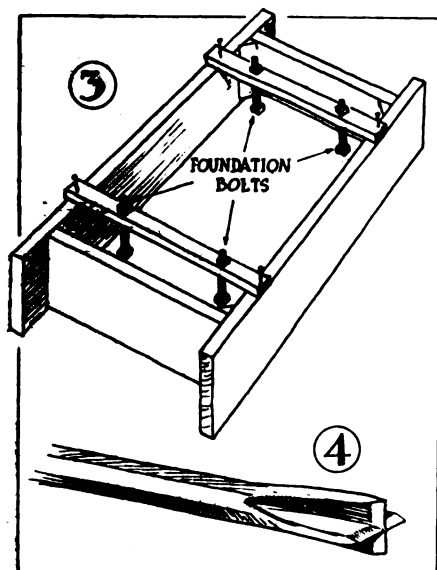


Fig. 3—Method of inserting foundation bolts in concrete base. Fig. 4—Type of drill used for foundation bolt holes if the bolts are to be inserted after the concrete is hard

is made from  $1\frac{1}{2}$  in. lumber. It is not necessary that the lumber be planed, but the concrete when it sets will exactly reproduce the irregularities of the wood, so if a smooth job is desired plane the insides of the mold.

1—Get out two pieces 56 in. long by 8 in. wide (or whatever height the foundation is to be).

2—Get out two pieces 18 in. long by 8 in. wide.

3—Draw pencil lines across the long pieces with a square 46 in. apart and about the same distance from each end.

4—Nail the pieces together, as shown in Fig. 2.

5—Get out triangular slips to nail in the corners so that the foundation will not have square corners.

Before going any further, the method of bolting the plant to the foundation is to be decided. If it is desired to drill holes in the concrete after it has set insert expansion bolts, then the mold is ready for pouring when it is set in place.

However, a better and simpler method is to cast the bolts into the foundation, and this can be done like this:

1—Tilt the plant over at an angle so that the holes in the base can be seen and measured.

2—Get out two pieces of wood 21 in. long,  $2\frac{1}{2}$  in. wide and 1 in. thick.

3—Lay one of these across each set of holes in the base and mark the position of the holes carefully with a pencil.

4—Procure square head bolts and nuts the diameter of the holes or slightly smaller.

5—Drill holes through the sticks the exact diameter of the bolts.

6—Lay the sticks on the mold.

7—Carefully measure the distance between the holes in the base lengthwise and also diagonally, and place the sticks so that the holes exactly correspond to the holes in the base.

8—Nail the sticks down on top of the mold with light nails that do not extend more than  $\frac{1}{2}$  in. into the moldboards.

9—Put the bolts through the holes, head down, and screw on the nuts to hold them in this position. They will then appear as in Fig. 3.

10—The mold is now ready for the concrete.

In mixing the concrete, use plenty of cement, some sand, gravel and water. If possible, use all sand, as this will make a smoother job, although not quite as strong as when crushed rock or gravel is used. Mix it to a thick consistency and pour into the mold. As soon as the concrete begins to set remove the nuts from the bolts and pry off the sticks. Then take a stick, and using the top of the moldboards as a guide, smooth off

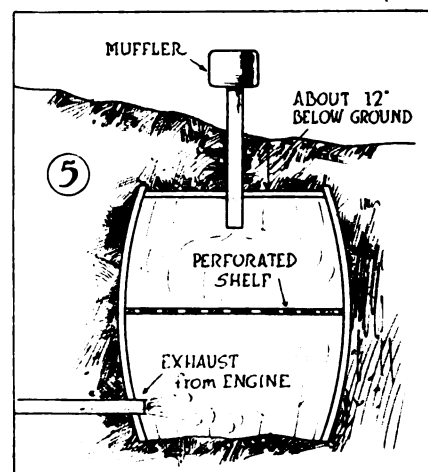


Fig. 5—Simple form of underground muffler for the exhaust

the top so that it is perfectly flat. A knife or trowel may be used to finish up around the bolts, but they must not be moved out of their position. The concrete should be allowed to set for at least three days before mounting the plant on it. Leave the mold in place for a week after the plant is mounted to prevent the corners from chipping off.

If the expansion bolt method of fastening is to be used, the foundation will be made without putting the bolts in and the top will be perfectly flat. The plant is set up on the foundation and the places for the holes marked. The holes are then drilled out with a drill such as is shown in Fig. 4, using a fairly heavy hammer and turning the drill slightly after each blow. The size of the drill and the depth of the holes will be determined by the size of the expansion sleeves used. These can be purchased in any hardware store.

Whichever method of bolting has been used, the plant is now ready to bolt down. If the plant does not sit exactly flat

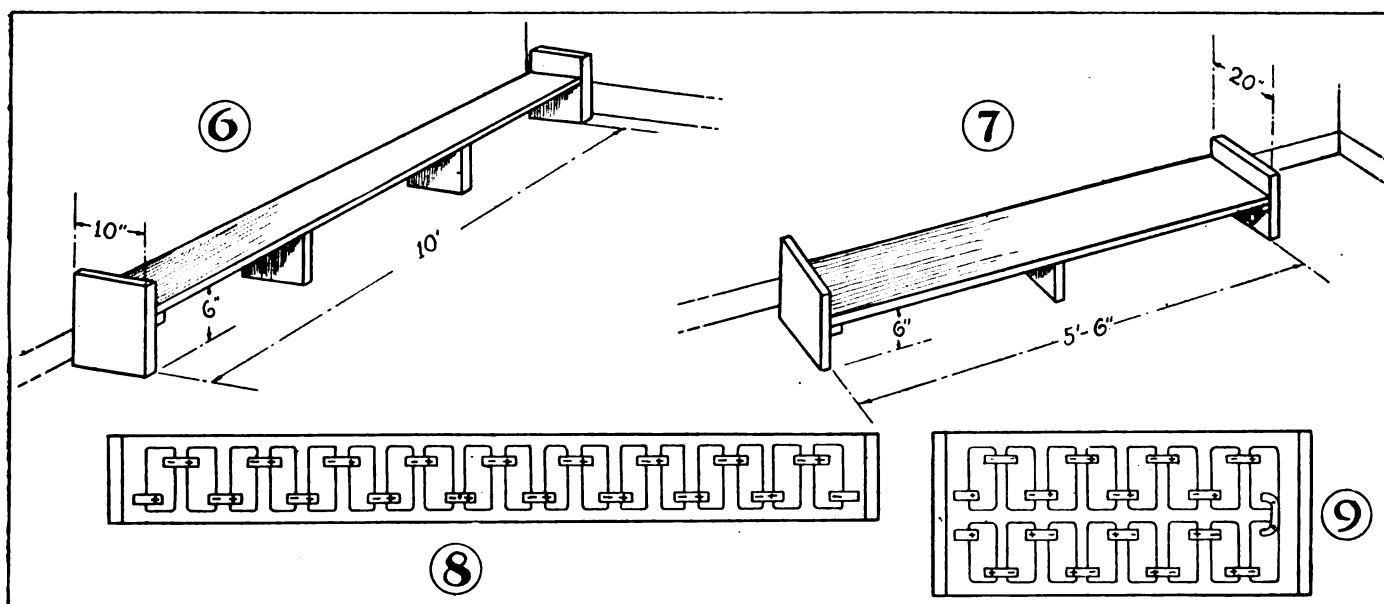


Fig. 6—Dimensioned drawing of shelf for battery when the cells are placed in a single row. Fig. 7—Dimensions and type of shelf for battery when cells are placed in a double row. Figs. 8 and 9—Connections between the cells when arranged in single and double rows

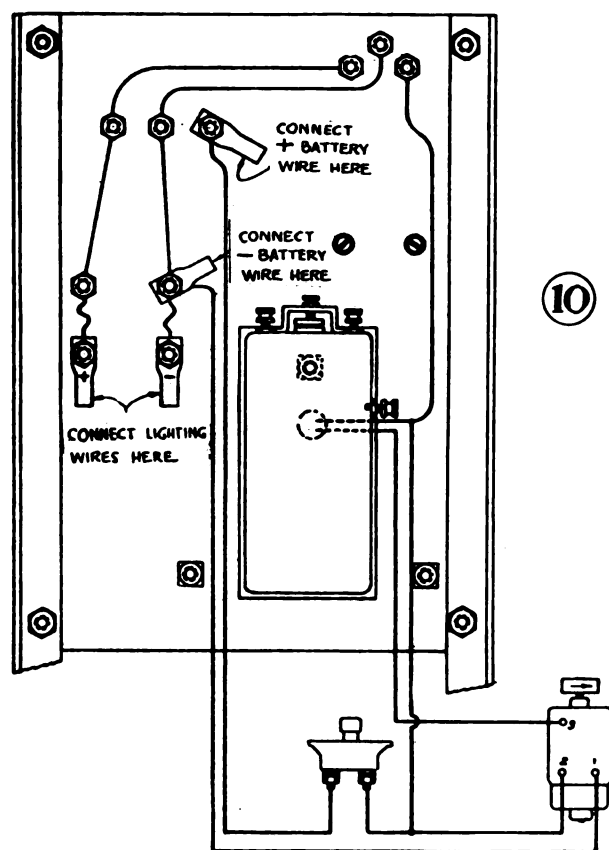


Fig. 10—Wiring diagram of the Dyneto farm lighting and power plant, showing the connections between the generator and switchboard

on the foundation, small slips of tin or flat pieces of iron may be placed under the base till the space between the foundation and the base is filled up, then bolt down tight. The holes in the base may be enlarged a little if the bolts in the foundation do not exactly line up.

#### The Exhaust

When located in the barn or small power house built especially for the purpose, the muffler furnished with the outfit will be sufficient to deaden the sound. In any case, the exhaust should be blown into the open air. The muffler is best placed at the outer end of the pipe. To allow the free passage of the burned gas, the pipe should be as straight as possible from the engine to the muffler. Every bend increases the back pressure and reduces the economy of the engine.

Where the pipe passes through the wall a square hole 6 in. on each side should be cut in the wall and a piece of tin or sheet iron with a hole for the pipe used to cover up the opening after the pipe is finally in place. This prevents the hot pipe from coming into contact with the wood and causing damage.

Another method is to allow the exhaust to go into a box or barrel which is buried in the ground. This is shown in Fig. 5. The top of the barrel or box should be at least 12 in. under the ground and a hole should be cut in the top the proper size to admit the exhaust pipe, which latter should extend well toward the bottom of the barrel or box. One or two perforated partitions may also be used to reduce the noise to a minimum.

The muffler proper, which is furnished with the equipment, should be attached to the end of the exhaust pipe which comes up through the ground. The bottom of the barrel or box is to be removed so that moisture will sink into the ground and not accumulate.

#### The Battery

The battery is best placed where it will be perfectly dry and sufficiently above the floor to lessen the liability of breakage. It is a good plan to have the batteries where they can be easily seen and replenished with water.

Where it is desired to place the battery with the cells in a single row (which is the best arrangement as they can all be examined easily for electrolyte level), a space 10 in. wide and 10 ft. long is required.

In the event that this space is not available, they may be set in two rows of eight cells each, in which case shelving 20 in. wide, 5 ft. 6 in. long and 22 in. high would be required.

The shelving should be  $1\frac{1}{2}$  or 2 in. thick and should be so made that it can be braced from the wall or ceiling. The fastenings should be of brass or copper and not iron, and if possible the entire shelving should be given a coat of acid-proof paint.

After the battery is removed from the crates:

- 1—Keep the cells right side up.
- 2—Do not allow the terminals of adjacent cells to touch one another.
- 3—Allow 1 in. space between each cell when they are placed on the shelves, and the same space between the cells and the back or wall. In other words, nothing should come closer to the cells than 1 in. excepting the bottom.
- 4—Connect the cells up, the positive (+) pole of each cell to the negative (—) of the next cell. Note by referring to Figs. 8 and 9 that the cells are bolted together positive to negative throughout the whole series, leaving only one positive and one negative terminal to which the wires from the switchboard are attached.

5—When making the connection from the battery to the switchboard remove the fuses, but replace them in their proper position before starting the plant.

#### Connections

The various connections to the switchboard are shown in Fig. 10, including those to the starting switch and generator. Proper lead wires are furnished to connect the switchboard with the battery terminals. These wires are attached to the back of the switchboard and are tagged positive and negative so that no mistake can be made in attaching them to the proper pole of the battery.

#### Operation

Before starting up the plant all the connections must be carefully checked to make sure:

1—That they connect the proper things.

2—That they are tight.

To determine whether the battery is correctly connected with the switchboard, push the button on the voltmeter, and if the hand of the latter points to the right side the connection is properly made.

Terminals are provided on the back of the switchboard to make the connections to the house lights and power leads. These are shown on the diagram in Fig. 10.

Before starting up the plant:

1—Fill the gasoline reservoir, which is in the base of the engine. It holds about  $1\frac{1}{2}$  gal.

2—Fill the crankcase of the engine with a good grade of automobile cylinder oil. The proper level is reached when the lower end of the crank will just dip into the oil on its downward stroke. The oil is placed in the base by removing the plate at the back of the engine.

3—Fill the hopper with clean water.

4—Close the ignition switch.

5—Place the foot on the starting switch and the engine should start up immediately.

6—Turn on the oiler.

7—To stop the engine shut off the ignition switch and turn off the oiler.

8—Set the lubricator to drop 5 drops per minute.

(To be continued)

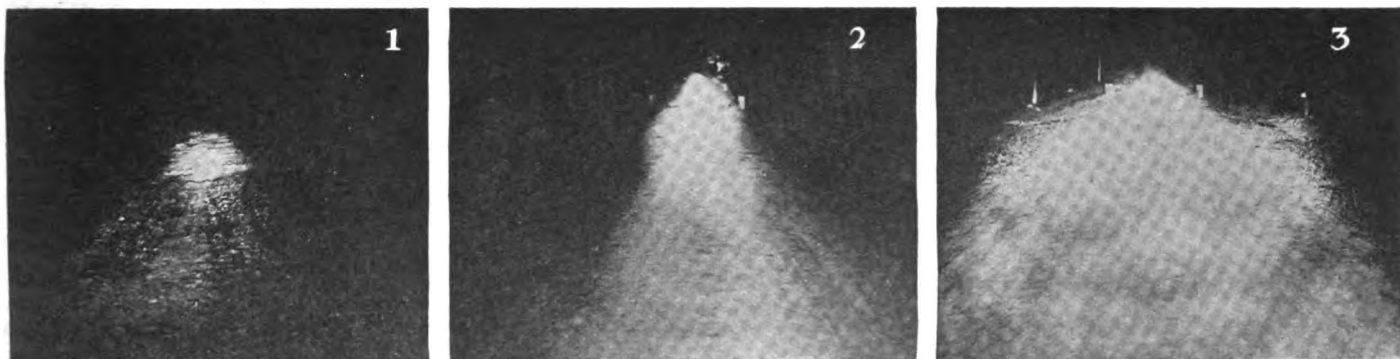
#### No More Over-Demonstrating

HARTFORD, CONN., Aug. 25—Dealers are doing away with long demonstrations, fully believing that an interested prospect can be shown all the good points of a car without going all over the state. Now when a prospect desires hill climbing ability demonstrated the dealers head for Avon Mountain, which is fully deserving of its name. Then there is Prospect Hill in the city, which is sufficiently steep to try out any car, and even around the state capitol the river bank road will make the best cars hum. There was a time, and not so very long ago, that would-be buyers arranged for week-end demonstrations that would land the whole family at the shore and get them back again. Hartford dealers believe they have given away too much gasoline, oil and time, to say nothing of tires. The new order reigns.

#### Hartford Cuts Deliveries

HARTFORD, CONN., Aug. 26—In accordance with the general plans for the conservation of all resources Hartford stores have cut down their deliveries. Purchasers are requested to carry home their light bundles as much as possible, and no orders less than one dollar will be delivered. The grocers met recently and decided to follow the plan of the dry-goods houses by cutting down deliveries to one a day and no special deliveries.





These explanations of the pictures were written by F. H. Ford, who writes the letter that appears on this page. No. 1—Unretouched night photograph taken with the regular lamps furnished on a Ford car. This is the spot of light most motorists risk their lives behind. The filament in the lamps used in making this picture were  $\frac{3}{32}$  in. long, inverted V shaped. No. 2—As near ideal light as it is possible to get with plain lenses in headlights. Filaments of lamps in this case were  $\frac{1}{4}$ -in. long, inverted V shaped. No. 3—Light which came up in trees and would cause glare has been put on edge of road by action of the lens. The culvert was 180 ft. ahead of the car. The bright light on the edge of the road offsets the other fellow's glare

## Why Headlamps Must Be Properly Focused

Editor Motor World: In your article on "Why Headlamps Must Be Properly Focused" in the May 15 issue of the Motor World the following statements are made:

*"Of course an absolutely cylindrical beam would not be desirable, as the illumination would be too restricted, but that is impossible of accomplishment, as the source of light, that is, the lamp filament, cannot be concentrated in a single point."*

In the next paragraph you say:

*"If a lamp filament is placed at any other position than the focus, the rays issuing from the reflector will either diverge, giving an extended, weak light, or else they will concentrate in a ring around a dark central circle. Neither of these conditions is to be desired; consequently the filament must be in the correct focal position to give a powerful, even light in a small area."*

A little further on the statement is made that "lamps are made with the filament concentrated in as near a point as possible."

This is true of some makes of lamps, but not true of all of them, and does not apply to any of them so far as being a desirable feature in lamps for use in automobile headlights.

The distribution of light from a reflector which is used for lighting the road ahead of an automobile is entirely different from that required for a searchlight or signal light. In the searchlight or signal light, distance is the only consideration. In lighting a road, while the distance to which the road will be lighted is of some importance, it is no more important than having the entire width of the road well lighted and also having enough light to show objects at the side of the road or on cross roads.

Figure 1 shows the road lighted by the kind of beam recommended in your article—maximum of distance, but the rest of the road is a hidden menace.

Figure 2 shows a road lighted as it should be—plenty of distance, nearly the

whole width is shown, and light along the edge and in the ditch to show the driver obstacles, as long as he is not bothered by glaring lights on an approaching car. In both cases the same headlights were used with plain glass lenses. The same candlepower lamps were used, but in Fig. 1 the point filament described in your article was used, and in Fig. 2 a narrow, V-shaped filament  $\frac{3}{16}$  of an inch long was used.

The reason for the difference is simple and obvious to any one who will stop to apply common sense to the matter. A lamp with a point filament set to give a wide, divergent beam, either ahead or behind the focal point, will not throw much of any light down the center of the road.

A lamp with a point filament set at the focal point will throw a very narrow light to a long distance. Neither of these are satisfactory as road lights. In practice a lamp having a short V or point filament cannot be moved more than about  $\frac{3}{16}$  of an inch away from the focus of the reflector without the shadow of the lamp base, or, as you call it, the "dark area," covering more than half of the lighted area.

If a lamp having a filament from  $\frac{3}{16}$  to  $\frac{1}{4}$  of an inch long is used, and one end of the filament is set at the focal point, a long, narrow beam of light will be sent out from that part of the filament. The opposite end of the filament will send out a widely diverging beam of light which will light the sides of the road near the car. The intermediate points will send out beams whose divergence will vary between the two extremes. This gives as near an ideal light, so far as lighting the road is concerned, as is possible with a plain glass lens.

The proper focusing of the lamp is not the only factor in getting an ideal light on the road. The lamp itself must be selected for filament shape, distance from base to filament, and candlepower. The headlights must be set properly to allow the beams from the lamps to strike

the road at the proper place. Both lamp bulbs and reflectors must be kept clean and in proper condition.

There is no use in trying to focus lamps or adjust your headlights to do away with glare, and at the same time get a good driving light. It is necessary to use some type of lens for this purpose, and the proper position of the lamp bulb to give the best result will depend on the type of lens used, and the instructions of the lens manufacturers should be carefully followed, as all of the most efficient lenses are designed for use with one distribution of light and will not give satisfactory results with any other.

Fig. 3 shows the effect of a properly designed lens when used in connection with a pair of well-equipped and properly adjusted headlights. Fig. 3 was taken under exactly the same conditions as Fig. 2 except that a standard make of lens was used to give the road light shown instead of plain lenses.—C. A. Shaler Co., F. H. Ford.

### To Receive Limited Supply of Bituminous

WASHINGTON, Aug. 24—The passenger car industry in Michigan will be limited in bituminous coal storage to a 20 day supply to be delivered after preferential industries, which include the motor-truck industry, are given a 45-day supply. The industry in other states will be limited to a 15-day supply after preferred industries receive a supply from 20 to 30 per cent. Public utilities will receive supplies ranging from 30 to 90 days before the non-preferred industries are supplied. All non-preferred industries are completely cut off from future shipments of by-products and gas coal.

Coal in excess of the foregoing storage limitations which are considered sufficient for current operations will not be delivered to non-preferred plants for use before April 1, 1919, unless there is a surplus over the demands of the preferential consumers.

The editor of this department is glad to answer questions. In sending queries, always include copies of contracts, notes, etc., to which you refer.

# THE LAW

By George F. Kaiser

As It Applies to  
Dealers  
Repairmen  
Garagemen

## Lighting Requirements in All States

Corrected and Revised to Date

THERE have not been many changes in the lighting laws of the various states during the past year. This is due to the fact that only a few states, to wit: Georgia, Kentucky, Louisiana, Maryland, Massachusetts, Mississippi, New Jersey, New York, Rhode Island, South Carolina and Virginia have held regular legislative sessions. A few others such as South Dakota, Nebraska, Wisconsin, North Dakota, Montana, Connecticut and Delaware have held special sessions. The lighting laws as a general proposition remain unchanged, only Kentucky, New York and Maryland having made changes.

STATE	HEADLAMPS	TAIL-LAMP	SPOTLAMP
Alabama .....	Two white.	Red. Must illuminate number plate.	No provision.
Arizona .....	Two white; visible reasonable distance.	Red.	No provision.
Arkansas .....	Two white; visible 200 ft.	Red. Must illuminate number plate.	No provision.
California .....	Two white or yellow; visible 500 ft. and must reveal objects 150 ft. ahead and 10 ft. to sides 10 ft. ahead; direct light must not rise more than 42 in. from roadway, 75 ft. in front of the car.	Red. Visible 500 ft. and illuminate number plate.	Included in provision for headlamps.
Colorado (Denver) .....	Two white; amber or intermediate shade, visible 300 ft., and must reveal objects 150 ft. ahead. Must eliminate all glare.	Red. Visible 300 ft.	No provision.
Connecticut .....	Two; visible 200 ft. Must reveal objects 150 ft. ahead. Light not to rise more than 42 in. from roadway, 75 ft. in front of the car, must reveal objects 10 ft. to sides, 10 ft. ahead.	Red. White light to illuminate number plate.	Must not be used unless rays projected directly on ground 30 ft. ahead of vehicle.
Delaware .....	Two white; visible 200 ft.	Red.	Must be on left side with rays over hood to right side. Can be used only to read numbers and signs and ascertain edge of road.
District of Columbia .....	Two white; dazzling headlamps not permitted; reflector must be removed or ground glass or muslin, etc., used to prevent glare.	Red. Must illuminate number plate.	No provision.
Florida .....	Light rays must not rise more than 42 in. 75 ft. in front of car.	Red.	No provision.
Georgia .....	White, throwing light 100 ft.	Red. Must illuminate number plate.	No provision.
Idaho .....	Two.	Red. Must illuminate number plate so numbers are visible 200 ft.	No provision.
Illinois .....	Two white; visible 200 ft. Must dim lights when within 250 ft. of another vehicle.	Red. Must illuminate number plate so numbers are visible for 150 ft. Control of rear light from within the motor vehicle is prohibited.	No provision.
Indiana .....	Two; visible 200 ft.	Red; independent of other lights; must illuminate number plate to be visible 100 ft.; adjusted so motor vehicle must be stationary to light or extinguish lamp.	No provision.
Iowa .....	Two; visible 500 ft. Light must not rise more than 42 in. from roadway, 75 ft. ahead.	Red; must illuminate number plate to be visible 50 ft.	Must not be used to throw direct rays in face of approaching drivers.
Kansas .....	Two white; visible 300 ft. Must eliminate glare.	Red.	Must not direct rays on approaching vehicles.
Kentucky .....	Two white or tinted; visible 200 ft. and revealing objects 10 ft. to the sides. Not more than 4 cp. permitted unless equipped so that direct light beams do not rise more than 42 in. above roadway 75 ft. in front of the car.	Red. Must illuminate number plate.	Spotlamp prohibited unless for emergency in locating road signs, etc., unless rays are projected directly upon the ground 30 ft. in front of vehicle.
Louisiana .....	Two white. Must throw the light 200 ft.	Red.	No provision.
Maine .....	One or two.	Red.	No provision.

STATE	HEADLAMPS	TAIL-LAMP	SPOTLAMP
Maryland	Two, white or tinted, other than red; visible 200 ft. and revealing objects 10 ft. to the sides. Not more than 4 cp. permitted unless equipped so that direct light beams do not rise 42 in. along the roadway, 75 ft. in front of the car. No lamps above 32 cp. permitted under any circumstance.	Red. Must illuminate number plate to be visible 25 ft.	Same as headlamps.
Massachusetts	Two white, yellow or amber tint; no dazzling rays are permitted more than 42 in. above the roadway 50 ft. ahead of the car. Must reveal objects 150 ft. ahead and 10 ft. to side and ahead.	Red.	No provision.
Michigan	One or two; visible 200 ft. Must be equipped with dimmer.	Red. Illuminate number plate.	No provision.
Minnesota	Two; visible 200 ft.	Red. Must illuminate number plate.	No provision.
Mississippi	Two white; visible 200 ft.	Red. Must illuminate number plate.	No provision.
Missouri	Two white; visible 500 ft. not exceeding 36 cp. Must reveal objects 150 ft. ahead. Direct light must not rise more than 42 in. from roadway, 75 ft. in front of the car. Must eliminate glare. Side lamps must not be more than 10 cp. and must eliminate glare.	Red; visible 500 ft.	Can be used in emergency in towns or cities and light must be directed down.
Montana	Two white; visible 20 ft.	Red. Must illuminate number plate.	No provision.
Nebraska	White; visible reasonable distance. Lamps of over 4 cp. light must not rise more than 42 in. from roadway, 75 ft. in front of car.	Red.	Must project rays directly on ground not more than 30 ft. from reflector.
Nevada	Two white; visible reasonable distance; must be equipped with dimmer; must not throw beam of light 42 in. above roadway.	Red.	No provision.
New Hampshire	Two; must dim or extinguish lights when necessary on approach of street cars or vehicles; must have dimming device approved by Commissioner of Motor Vehicles.	Red. Must make number plate visible for 50 ft.	No provision.
New Jersey	Two white; visible 250 ft.; direct rays must not rise over 4½ ft. from road except when glare is eliminated; must have lamps dimmed or device having approval of Commissioner of Motor Vehicles.	Red. Must illuminate number plate and make numbers visible 50 ft.	Spotlamps prohibited for driving; may be used for reading signs and house numbers.
New Mexico	Two.	Red.	No provision.
New York	Two; visible 250 ft. Must reveal objects 10 ft. to sides, 10 ft. ahead; direct light must not rise above 42 in. from roadway 75 ft. in front of car; all glare and dazzle must be avoided.	Red. Must make numbers visible for 50 ft. Illuminated rear plates may be used if number is visible 50 ft.	Same as headlamps.
North Carolina	Two; direct rays must not rise more than 42 in. from road 75 ft. in front of car.	Red. Must illuminate number plate.	No provision.
North Dakota	Two; not more than 4 cp. permitted unless equipped so that direct light beams do not rise more than 42 in. above roadway 75 ft. in front of the car.	No provision.	Not to be used unless light projected directly on ground not more than 30 ft. in front of car.
Ohio	Two; visible 200 ft.; direct light must not rise more than 42 in. above the roadway 200 ft. in front of car.	Red.	Not to be used when within 700 ft. of other vehicles unless projected directly on ground not exceeding 60 ft. in front of car.
Oregon	Two white; visible 200 ft.; must be dimmed or directed so center rays strike roadway 75 ft. in front of car.	Red. Must illuminate number plate.	No provision.
Pennsylvania	Two white; visible 200 ft. Use of dimmers regulated by municipal ordinance.	Red. Must illuminate number plate.	No provision.
Rhode Island	Two white; visible 200 ft.	Red; must make number plate visible 60 ft.	No provision.
South Carolina	Two white.	Red.	No provision.
South Dakota	Two white.	Red; must make number plate visible.	No provision.
Tennessee	Two white.	Red.	No provision.
Texas	Two white; visible 500 ft.; direct rays must not rise more than 48 in. from the roadway except if glare eliminated.	Red; visible 500 ft.	No provision.
Utah	Two white; must reveal objects 10 ft. to side 10 ft. ahead; not more than 4 cp. permitted unless direct beams do not rise above 42 in. above the roadway 75 ft. in front of the car.	Red; must make number plates visible.	Must not be used unless rays projected directly on ground not over 30 ft. in front of car.
Vermont	Two; visible 200 ft.; direct rays must not rise more than 42 in. from road 75 ft. in front of vehicle.	Red; must make number plate visible for 50 ft.	No provision.
Virginia	One white, throwing light 100 ft.	Red. Must illuminate number plate.	No provision.
Washington	White; must not rise more than 42 in. above road unless dimmed.	Red.	No provision.
West Virginia	White.	Red.	No provision.
Wisconsin	Two white.	Red.	No provision.
Wyoming	One white; visible 500 ft. Must be equipped with dimmer.	Red; must illuminate the number plate and make numbers visible for 50 ft.	Forbidden except in emergency for rounding curves or turning corners.

# Repairshop Shortcuts

*From Motor World Mechanics*

## No. 1501—HOLDING A FORD DIFFERENTIAL CASE

A Ford differential case is held on the bench by drilling three holes through the top of the bench to allow the three bolts to go through them. This will permit the case to sit square on the bench so that the drive-gear screws may be turned, the bolts preventing the case from turning.—W. J. Wilson, Central Garage, Middleport, N. Y.

## No. 1502—VALVE-SPRING HOLDER

A valve-spring holder is made from sheet metal so that when the valve-spring is compressed by the valve being opened by the cam the device is slipped in and catches over the ends of the spring. When the engine is turned over and the valve closes the device holds the spring compressed and the pin can be taken out.—W. B. Wheatley, Charlotte, N. C.

## No. 1503—REPLACING VALVE WASHER LOCKS

Valve locks of the split washer type are easily replaced by using a horse-shoe magnet. The washer is placed on the magnet and then pushed into place in the groove in the lower end of the valve stem.—Charles A. Knause, Hamburg, Pa.

## No. 1504—TOP CENTER FINDER FOR ENGINES

A device to find the top center of engines where the spark plug is not over the piston and where it is not convenient or possible to remove the head is made from a spark plug shell and a piece of drill rod. The shell is filled up with babbitt and a hole drilled through this to permit the drill rod to pass through easily. The drill rod is first graduated with marks 1/16 in. apart and then bent so that the extended lower leg touches the piston when it comes up.—A. R. Ackerman, Dodge Bros.' District Office, Boston.

## No. 1505—KEEPING THE AIR HOSE OFF THE FLOOR

The air hose can be kept off the floor by fastening a ring about half-way from the pipe to the valve. A rope is fastened to this ring and the rope tends to pull the ring up by means of a weight on a pulley. A ring on the rope prevents it from being pulled out too far. The top pulley can be placed on any convenient post or on the wall.—H. R. Grigsby, Walker Motor Sales Co., Oklahoma City, Okla.

## Make a Dollar

*HOW often have you been compelled to rack your brain to overcome some difficulty? But when you did find a solution—what satisfaction it was! Well, here's a chance for you to dig some of those life-savers out of their hiding places and put them to work for your fellow-craftsmen. Send them to Motor World. We will pay you a dollar for every one accepted for publication.*

*The only requirements are these:*

*1—Describe the shortcut briefly but clearly, in few words.*

*2—Send a sketch, in pencil or pen, no matter how rough; our artists will finish the job.*

*3—Write on ONE side of the paper only.*

*4—Sign your name and initials, the name of the company you are with, and the town.*

*Write plainly. If your name is unusual, print it in capital letters.*

## No. 1506—WING-NUT WRENCH

A wrench for tightening wing nuts is made from a piece of flat steel stock. A hole is bored to permit the bolt to slide through and slots are cut out from this hole at right angles to catch the wings. Different size wrenches are made for different wing nuts. A proportion of five times the distance across the wings for the length of the handle gives good results.—L. A. Hunting, Kansas City, Mo.

## No. 1507—TIRE AND RETREAD MARKER

A marker for marking sections of rubber and fabric to be cut from a casing which is to be retreaded is made some-

what after the principle of a carpenter's gage. A piece of 1 x 3/8-in. strap iron 1 ft. long is bent at right angles 8 in. from one end and the 4-in. end is bent over at an acute angle as shown. A 3/8-in. slot is cut in the longer arm and a 3/8-in. bolt sharpened on the point and with its head cut off goes through the slot. A hexagon nut goes on the lower part of the bolt and a wing nut on the top so that the bolt can be moved along in the slot and fixed at any point. By using the acute angle of the device to catch the bead the sharp point of the bolt will make a parallel line on the casing.—R. B. T., Ellert Rubber Co., San Francisco, Cal.

## No. 1508—HOLDING TIRE FLAPS

Tire flaps are held while replacing the casing by means of a pair of clamps made from paper fasteners and rubber bands made from old tubes. The ends of the paper clips are cut off and turned over to form loops, bent wires being inserted in these loops to catch the rubber bands. The clamps are then stretched across the outside of the casing and hooked onto the corners of the flaps, holding them in place.—G. Mark Piper, Bloomington, Ill.

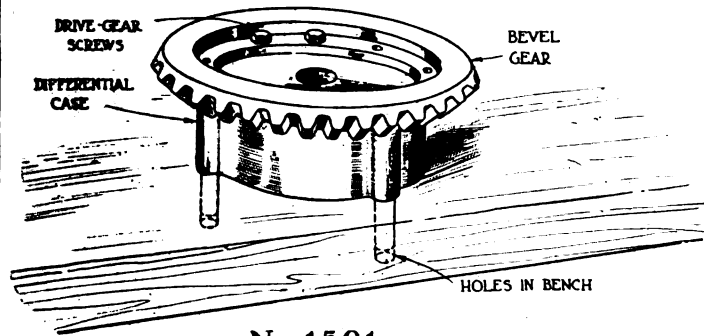
## No. 1509—AIR PRESSURE FOR OIL BARRELS

Air pressure applied to oil barrels will make the oil come out of the faucets more quickly. If the oil is stored in steel drums pipe connections can be made with the threaded bung to apply the pressure. Pressure can be maintained by using an inner tube as a reservoir and a bicycle pump as a source of air pressure, connecting the tube with the barrels by piping.—L. H. Leonard, Wolfboro, N. H.

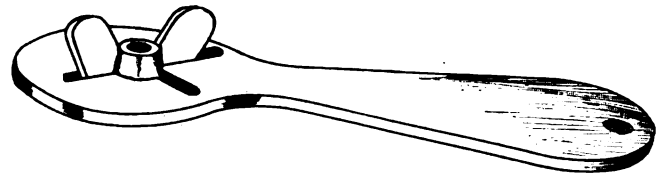
## Colorado Dealers Organize

DENVER, COL., Aug. 26—The Eastern Colorado Automobile Dealers' Association has been organized, and held its second meeting at Limon last week. The organization was assisted in its formation by Harry G. Moock, secretary of the Rocky Mountain Automobile Trade Association. It has put into effect the conservation plan recommended by the National Automobile Dealers' Association. The following are members of the organization: Mr. Kennedy, Arriba; West Garage, Arriba; Leon E. Lavington, Flagler; Charles Stager, Flagler; Winger Bros., Flagler; Tom Manning, Seibert; M. E. Harrison, Vona; Chas. O'Neil, Vona; Mr. Wadsworth, Genoa; Mr. Stacey, Limon.

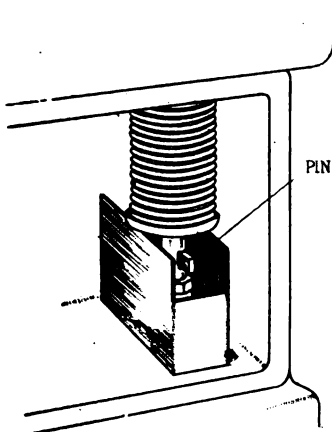




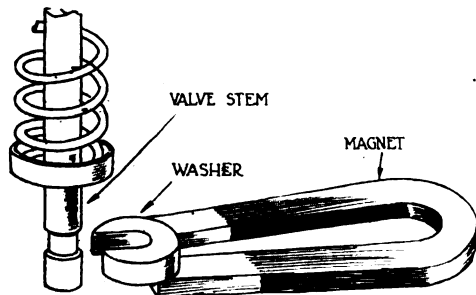
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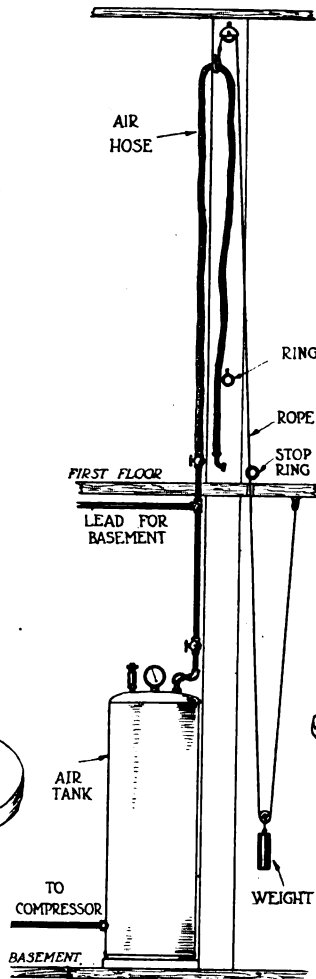
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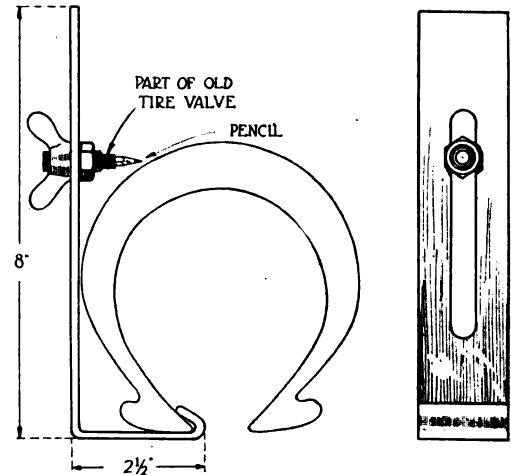
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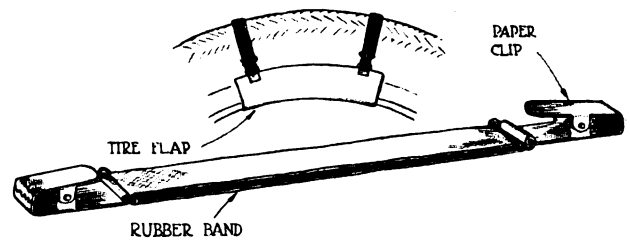
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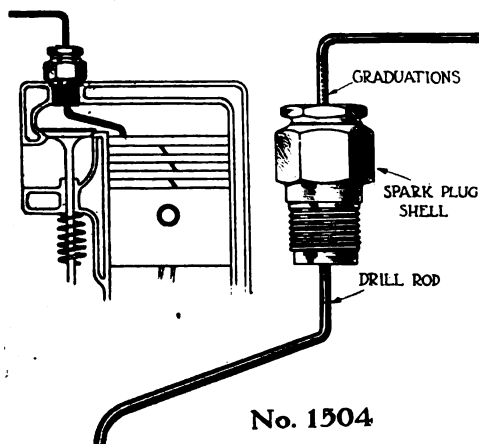
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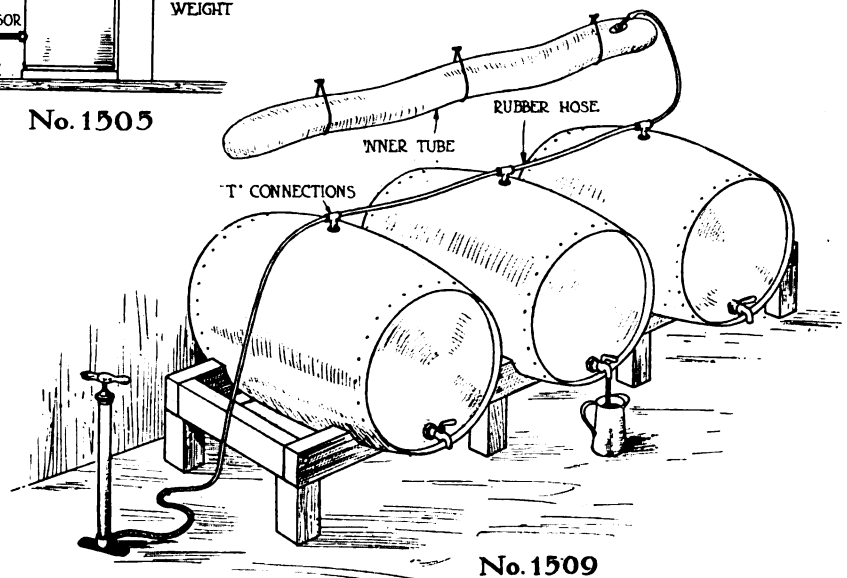
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No. 1509

# Editorial Observation

## Dealer Tractor Demonstrations

**I**T is second nature for the automotive dealer to hold a show or an exposition or a demonstration or some other public event. It is bred in the industry.

The motor car industry has been brought to its large proportions through the merchandising methods that have been a part of it, and not the least of these is the circuit of annual expositions, generally called shows, that takes in small towns and big cities and stimulates trade.

One of the reasons the motor car industry has progressed in engineering and design is that annually all the makers have come together in a competitive showing. This has brought out the best in each and has enabled all to profit and progress.

And now that the automotive man has the tractor as a product this exposition or demonstration plan fits like an old shoe. It seems the most natural thing in the world for the automotive dealers, with their years of motor car training, to get together and show off before prospective purchasers.

Few people are aware of the extent to which the local demonstrations have already taken hold. They are being held in nearly every state, in varied form, under different auspices and under widely varying rules. But the net result is the same: The business is stimulated, the farmer gets tractor education, sales are increased, agriculture is developed and both dealer and farmer go merrily on their way with the great circuit of demonstrations.

### Demonstrations Are Simple

The beauty of the demonstrations is that the dealer doesn't have to send to the factory for a "show model." All he has to do is get a tractor that will run and let it run. Of course, a skilled driver is an advantage, but he can be secured from the dealer's own establishment.

In some states the departments of agriculture are fathering demonstrations. In other states farm bureaus are pushing the work. And in many states little groups of dealers in small country towns are getting together and putting on their own demonstrations with help from no one. Why should they

need help? All that is necessary is the posting of signs broadcast around the country, the making of a few or no rules and the loan of a farm whose owner is willing to have it plowed for nothing.

And the farmers come in droves. Their wives come, and the boys. Sales are made, prospects are secured and business is accelerated.

It is much easier than holding a show. To start with, the show is held in the winter, when there must be a building, but the tractor demonstration is held under the open sky in a building that costs nothing. Wherefore there are few expenses and no admission has to be charged.

Dealers would not think they could hold more than one show of motor cars a year, but the ease and lack of expense in holding a local tractor demonstration make any number possible.

### Farmers Anxious to See Tractors

In states where demonstrations are not being held in great enough number dealers should get together and put on demonstrations. And if there is only one dealer in the town he can run the whole thing just as well as though there were a dozen. Farmers at the present stage of the industry will go almost as far to see one tractor plow as they would to see three or four.

The rules vary. Sometimes there are none at all. Sometimes a tractor is given a certain area and the gasoline and oil are measured. But what the farmer wants to know most of all, especially in lands of varied farming, is whether the machine will work in all his soils and on all his grades of landscape. This is an error often made, that the land plowed is always perfectly flat. How can a farmer know whether he wants a tractor until he knows what it will do on other than level land?

Naturally, demonstrations are as yet crude, because they are comparatively new. Motor shows were once in the same class. But waiting for the day of perfection in either tractor or demonstration is not the way. The thing to do is have lots of demonstrations and plenty of tractors and the day of perfection will come rapidly.

# GET BEHIND THE RURAL MOTOR EXPRESS

## THEY'RE ALL DOING IT

**T**HE Rural Motor Express is the old country stage line a la motor truck. The Express covers a route through the country, carries things from the city to the farmer, saves time for the farmer, brings produce to the city and thereby brings at reasonable prices foodstuffs to the city man, whereas they might otherwise go to waste on the farm and the city man pay high prices for inferior foods. The Express helps develop the country areas, it cuts shippers loose from the railroads and helps avoid rail congestion, and—IT SELLS TRUCKS. It will sell many trucks in the FUTURE. In order to aid the government in this work the N. A. C. C. is operating through the National Motor Truck Committee at 7 East 42d Street, New York. Samuel A. Miles is chairman, assisted by F. W. Fenn. These men want you to write to them and ask for information as to how to investigate prospective routes, how to determine what rates to charge and how to sell the idea to the farmer. Get behind the movement. The first step is to investigate. Write to this committee at 7 East 42d Street, New York.

### Farmer and Country Stores Served

Arthur Brown of Walhalla, S. C., writes us as follows: "We are establishing an express motor truck line from Walhalla to Picket Post, Tamasee, Salem and return to Walhalla, covering a very prosperous territory of about 30 miles. We would make this a daily drive or possibly twice daily.

"Any information concerning motor truck express lines given us will be greatly appreciated. This line not only covers the farmer but takes in about ten country stores, which at present are suffering from lack of transportation.

"We would be glad if you would mail prospective truck purchasers, Rev. J. A. Bond, Richland, S. C., care Mr. R. Shelor and Mr. B. S. Childress, Salem, S. V., literature on Rural Motor Express service. Also if you have any data on cost of operation in maintenance of one-ton trucks we would be glad to have same and what, if any, are the established rates for light express."

From R. B. Hanson, Osawatomie, Kansas, we received the following letter:

"I am making a survey of certain sections of Kansas, with the intention of establishing Rural Motor Express Lines such as discussed in the Motor World issue of Aug. 7, page 6.

"Please send to R. B. Hanson, Osawatomie, Kan., all the literature you can, treating this subject, including cartoon posters, Rural Motor Express Lines, Organization of Rural Motor Express Lines.

### To Run in Three Directions

"My idea is to run lines in three directions out of Kansas City, Mo., into Kansas, each line fifty to one hundred miles out. I want help in selecting equipment, laying out routes, and establishing rates that will get the business because of their fairness and still be profitable for a company backing the enterprise.

"I am to-day writing to the Highway Transport Committee of the State Council of Defense of Kansas, asking also for their assistance, and stating my plans."

W. H. Turner writes: "Your letter of the 12th received. The writer has just returned from a trip through the Pocatello country and saw the use of motor trucks on the road but no doubt many others can be used there to good advantage.

"I would be glad to receive your pamphlet, Organization of a Rural Express Line and any other suggestions that you can give.

"I want to push this work as much as possible and have taken the matter up with the State Council of Defense."

The following was received from L. A. Anderson, vice-president, Hupp Motor Car Corp., Detroit, Mich.: "Thank you very much for your letter of Aug. 17. We stand ready to give the very best co-operation in our power. We have delayed the general work only because we were convinced that we could add a great deal of strength to our plea for co-operation now, as compared with the campaign conducted when the matter first came up.

"I believe all dealers will be greatly impressed with the support of the Rural Motor Express, and I am wondering if it will be possible for us to secure about 1100 copies of the Bulletin No. 2 which you enclose with your letter of Aug. 17. If so, will you please forward them immediately for my attention."

C. W. Munson, president of the Elderfields Reservation, Ind., Flower Hill, via Plandome, Nassau County, N. Y., writes: "I was pleased to read your letter of July 25 and I would be very glad to meet

you and discuss the opportunity which our organization may have to increase our helpfulness in war work along the lines of Rural Motor Express.

"Our tractors and trailers are now employed in gathering crops from the farmers in conjunction with our farm tractors and its auxiliary labor saving machinery.

"We are attempting to market all that is possible in our county limits, including the army encampment at Camp Mills. A large proportion of the purchases are sent to New York and, except for a small proportion, these trucks come back empty. If we can secure a return load of sufficient tonnage to warrant economical time we would be very glad to lend helpfulness to your committees work in any way that may seem practicable."

James S. Blakeslee, who is the Fourth Assistant Postmaster General, writes: "I am in receipt of your letter of Aug. 12 and it gives me pleasure to comply with your request for information and data relating to the establishment of Motor Vehicle Mail Routes.

"Under authority of Congress, there are now in operation 15 Motor Vehicle Mail Routes extending from Portland, Maine, via Hartford, Connecticut, and New York, Philadelphia, Baltimore and Washington, to The Plains, Va.; also routes from Columbia, S. C., Savannah, Ga., to Statesboro, Ga., and from Columbus, Ohio, to Zanesville, Ohio, and from Indianapolis to Cincinnati, and from Indianapolis to Louisville. These routes are mainly connecting or trunk line routes and those in the South and Middle West will ultimately be connected up with those in the east.

### Better Products at Less Cost

"These routes are laid out through producing territory to important market centers, and the purpose is to demonstrate the practicability, utility and value of this method of transportation in bringing the farmer into immediate touch with the consumer, by giving a direct, expeditious and reliable service at a reasonable cost for carriage, thus relieving other congested avenues of transportation and preventing wastage at the farm, thereby conserving other less perishable needed food products and encouraging increased production at the same time, insuring a reliable market to the producer and giving the consumer the advantage of better and fresher products at less cost.

"It is intended ultimately to extend these trunk line routes to the Pacific

Coast and connect with them feeder or lateral routes from contiguous producing territory.

"Owing to the limited amount of the appropriation it will hardly be possible to do more this fiscal year than connect up the routes in Ohio with those terminating at McConnellsburg, Pa., thus giving a through route to Portland, Me., to extend the service south from Louisville, possibly to New Orleans, and thence connect up with the service in Georgia, and also connect up service with that now in operation southwest from Washington.

"On the 15 routes now in operation there are employed 60 trucks of from 1 to  $\frac{1}{2}$  ton capacity, including reserve trucks, and 50 drivers. These routes cover 2311.06 miles involving a daily travel of 2622.20 miles or about 2,000,000 miles per annum.

#### Roads Postal Revenue Getters

"Some of these routes have been in operation sufficiently long to demonstrate not only their value and utility to the producer and to the consumer, but to demonstrate the fact that they are not only self sustaining but that they are large postal revenue producers.

"A tabulation of the postal receipts and cost of operating eight of these routes from Jan. 1, 1918 to May 31, 1918, a period of five months, shows gross postal receipts of \$152,237.74 with operating expenses of \$27,130.98, a net profit of \$125,069.40, an average of about \$3,000 per route per month.

"The service which it is proposed to give to patrons is similar to that afforded by commercial express trucks, within the limit of weight prescribed by law, that is to say 70 lb. for a distance of 300 miles of the point of mailing and 50 lb. beyond 300 miles. Commodities such as eggs in crates, butter, crates or baskets of fruit will be accepted if presented prepared just as they usually are for shipment by express, and where a shipment warrants it, they will be delivered direct from the consignor to the consignee."

Williams of Pratt & Williams, San Francisco, writes: "We have run across an article in the Aug. 7 issue of the Motor World in which we are very much interested. We would appreciate it if you would send us such literature as you have described therein, to assist us in setting forth the advantages of the Rural Motor Express to such men as may be interested in this territory.

"We handle three lines of trucks and one make of trailers, so you will appreciate our interest in this matter."

C. W. Coons, secretary of the Montgomery County Chamber of Commerce, Crawfordsville, Ind., writes: "We would be interested in receipt of your pamphlet entitled Organization of Rural Express Lines.

#### Two Companies in Montgomery County

"The use of the motor truck in this locality for the handling of agricultural products to connect cities and towns is quite prevalent. There are two companies that make fairly regular trips

from here to Indianapolis and return and quite a number of other trucks are operating independently in other directions but no formal organization of these lines has taken place."

J. H. Ramsden, general manager of the Nash Sales Co., Minneapolis, writes: "Through the Nash Motors Co., whose trucks we sell in this northwest territory, we learn that your committee had prepared a pamphlet entitled Organization of a Rural Express Line.

"We are very much interested in this proposition and would appreciate your sending us by mail or parcels post say fifty of these pamphlets so that we might distribute them among our various dealers throughout the territory we control."

W. H. Metcalf, secretary of the Motor Truck Association of Philadelphia writes: "The Motor Truck Association will be very glad to co-operate with Mr. Ludlum and do anything we can to promote Rural Motor Express lines. Mr. Ludlum and Mr. Chapin were both speakers at the last meeting of the association. During July and August, we, of course, do not hold meetings.

"Mr. Hawley has instructed me to write you that we would be glad to appoint a special committee at once to co-operate with Mr. Ludlum and his committee.

"The writer has also received your Form No. 2 booklet and Rural Motor Express lines. Our association does not maintain a paid secretary or any employees but if we find it to our advantage to do so in addition to appointing a committee we will certainly arrange to have some one help to promote these rural express lines.

#### Is Motor Express Profitable in Winter?

Lester E. Goodheart, of Bloomington, Ill., writes: "Kindly send me information that you may have at hand in reference to Rural Motor Express Lines. What size truck would likely be most profitable in this territory? Is the Rural Motor Express business profitable in the winter time?"

Burt Wickham, secretary, Highways Transport Committee, Michigan War Preparedness Board, Lansing, Mich., writes: "Your letter of Aug. 8, addressed to W. E. Metzgar, chairman, Highways Transport Committee, has been received, and I thank you for calling our attention to R. R. Gilmore of 1941 Horton Ave., Grand Rapids, Mich., stating that he is about to start a Rural Motor Express line out of Grand Rapids. I will take this matter up personally with Mr. Gilmore, through our representatives in Grand Rapids.

"Several days ago I sent a communication to your department, requesting five hundred each of your organization plans of Rural Motor Express, Form No. 2, and booklet on Rural Motor Express Lines. It is quite necessary that these be received at once, as we have letters all written and dated ready to mail this matter out, and would thank you for an early shipment.

"We expect to have a booth at the state fairs at Detroit and Grand Rapids, and it struck me as being an ideal place to pass out this literature. If you have a suffi-

cient supply on hand which you would care to send us, we would be glad to pass this out through our representative at the state fairs, thereby reaching a very large portion of the people of Michigan."

A. J. March, president, Milwaukee Automobile Dealers, Inc., Milwaukee, writes: "I have yours of the second and will be pleased to be of any service possible in connection with the promotion and organization of Rural Motor Express Lines throughout Wisconsin and to this end will call a Board of Directors meeting the fore part of the coming week, to uncover any ideas they may have and get the ball rolling.

#### Wisconsin Needs Rural Express

"Wisconsin is in great need of these lines. Our road conditions are above par in most sections, with a freight congestion staring us in the face. Have not yet gone over the printed matter thoroughly but will do so to-night."

The following was received from Mandel Sener, secretary-manager of the Chamber of Commerce at New Bern, N. C.: "Answering your favor of July 23, relative to co-operation of Rural Motor Express lines. We have a number of truckers and farmers who haul their truck, grain, cotton and tobacco to the New Bern market or for shipment to Northern markets on motor trucks owned by themselves. The sizes vary according to the needs of the trucker or farmer. We do not have any organized motor express line and there doesn't appear to be any need for it in this section at this time."

G. C. Halsey, sales manager of the Master Truck Co. of Nebraska, writes: "Kindly send us any information you may have regarding the organization of Rural Motor Express lines. We have plans under way of organizing in eastern Nebraska and western Iowa routes of this nature."

The following was received from L. M. Vaughn, secretary of the LaPorte Chamber of Commerce, LaPorte, Ind.: "Our manufacturers have been approached through the Traffic Bureau of this organization by promoters interested in a motor truck line through this city to Chicago.

"It is the opinion of the manufacturers that such a plan would be most practical as the roads are in suitable condition and the business would justify regular service. However, the way the plan has been put up to us is that they become stockholders in a company to finance the deal and since they have their own businesses to finance they are unable to push the proposition.

#### Would Gladly Co-operate

"Our Traffic Bureau will be very pleased to co-operate with you to the fullest extent in this matter, especially routing freight over the Lincoln Highway. We can easily arrange a depot for this service."

Claude Newman, advertising manager of the W. E. Stevens Co., Sioux Falls, S. C., writes: "For some time past we have been contemplating establishing what is

(Continued on page 41)



# The RETAIL NEWS

## MIDDLE WEST

The Stearns Motor Sales Co., Cleveland, will build a \$25,000 service station at 1969 East Sixty-first Street. It will be a one-story structure, 150 x 134.

The Clough Reihm Co., Quincy, Ill., Chevrolet distributor for this territory, has opened a downtown salesroom and office at 419 Hampshire in charge of John Clough. The old building at Eighteenth Street and Broadway will be used as a service station, storeroom and repairshop, and will be in charge of Charles Reihm. The firm has taken an agency for the Case tractor for this territory.

The Electrical Testing Co., Peoria, Ill., will occupy its new electrical and battery service station. The building is 60 x 150, one side being devoted to the office and shop and the other side to parking cars.

Charles O'Lone of the Central Garage, Monroe, Mich., has leased the Monroe Garage, formerly occupied by the Hubble Auto Co. He has the agency for the Reo, Overland and International lines, and his expanding business necessitated the added space. The Hubble Auto Co. has reoccupied its former quarters before it moved to the Monroe Garage.

The Briscoe Motor Sales Co., St. Louis, distributor of the Briscoe and the Liberty, has opened a new showroom at 2925 Locust Street.

The Overland Automobile Co., Quincy, Ill., has moved into a new home at 609-611 Vermont Street, one of the finest of the kind in Quincy. There are three stories and a basement, totaling 25,000 square feet of floor space. D. R. Yantis is district manager. The firm controls the Overland distribution in 25 counties of Illinois and Missouri.

E. M. Moerlicke, Kenosha, Wis., has acquired the West Side Garage, Elizabeth Street, which will be made the Buick headquarters.

The Wisconsin Briscoe Co., 495 Broadway, Milwaukee, has moved its headquarters and service station to the building at 539-543 Broadway, formerly occupied by the East Side Buick Co., which has moved to the former Hoppe-Hatter Motor Co. building at 486-490 Milwaukee Street.

The Baker R. & L. Co., Milwaukee, Wis., distributor of the Baker R. & L. electric, has moved from 604 Downer Avenue to 430 Jefferson Street.

The Siegel Garage & Service Co., Milwaukee, has filed notice of dissolution of the corporation, which has been inactive for some time.

The Standard Oil Co., Grand Rapids, Mich., has erected six new service stations at various points throughout the city, where gasoline and lubricants may be purchased.

## SOUTHWEST

James A. Amess, Abilene, Kan., has purchased the vulcanizing tire repairshop of R. E. Goure.

Carey & Reed, Belleville, Kan., dissolved partnership. Mr. Reed bought Mr. Carey's interest and will operate under the name of J. A. Reed.

B. Shute, Bern, Kan., has bought the garage of F. C. Grossenbacher.

Andy Hager, Belpre, Kan., has purchased the Belpre Garage formerly owned by H. Goodell.

Downs Tire Works, P. N. Franzen, proprietor, Downs, Kan., is successor to L. L. Cornse.

Sullivan & McCurdy, Ellis, Kan., are the new managers of the Merrill & Cromb Garage.

George W. & J. Hill, Greensburg, Kan., are successors to Grant & Ruth.

David Curtis, Liberal, Kan., has purchased a half interest in the Overland Garage of Charles Molter.

Nelson-Newlin Tire Service, Marion, Kan., has been taken over by T. W. McFarland. The name has been changed to the Marion Tire Service.

Roy McCaughey, Olathe, Kan., has sold his interest to Jake Musselman.

The Autoway Tire & Vulcanizing Co., Ottawa, Kan., has moved to the Newman Waring Building.

Red Line Garage, Harry Reed, proprietor, Plainville, Kan., is successor to Reed & Hilgers.

B. H. Arnold, Pratt, Kan., has purchased an interest in the J. E. Fraizer Garage. The new firm will be known as Fraizer & Arnold.

Russell Mills, Pratt, Kan., sold his interest in the Pratt Electric Shop to his partner, Charles Buchlin.

Henry Whitman, Russell, Kan., has purchased a half interest in the Radke Garage, and it is now managed by Whitman & Witt.

Ira Foster, Wichita, Kan., has bought the garage of W. A. & Nora Garlits.

Jacobs Bros., Blodgett, Mo., are successors to Cunningham & Withrow.

The McAnaw, Cameron, Mo., which was damaged by fire, has been remodeled, and will be occupied by the Tamer Automobile Co.

Hite's Garage, Eldon, Mo., has improved its repair service by adding a new equipment.

N. F. Whitener, Frederickstown, Mo., has bought the Madison Automobile Co.

J. Samuel Stone, Kingston, Mo., has purchased A. L. Houghton's Garage.

The Bryant and Ray Automobile Co., Fort Smith, Ark., has moved into a new location at 17 and 19 North Ninth Street.

The Loden-Baker Automobile Company, Fort Smith, Ark., is now in its new home at 17-19 North Tenth Street.

H. C. Eller, Fort Smith, Ark., is now sole owner of the Inter-State Garage and the Inter-State Oil Co.

The Electric Service Co., Fort Smith, Ark., will move into the two-story triangle building, Townson Avenue and North A Street.

J. H. Hansen, Elgin, Okla., sold the Elgin Garage to Charles G. Coffin.

B. C. Caddel, Granite, Okla., is successor to Frank Polaski.

J. A. McIntire, Norman, Okla., has sold his garage to J. A. Mendelhall.

J. V. Dickenson, Belton, Tex., has bought the Main Street Garage.

P. V. Winstead, Canyon, Tex., has purchased the Wilson Garage.

The Hill Motor Co., Orange, Tex., has moved to Green Avenue and Third Street.

J. B. Wilson, Tulla, Tex., bought the Highway Garage.

J. S. Mitchell, Corsicana, Tex., bought out the Larrison Garage on West Third Avenue.

P. M. David, Le Mars, Iowa, is successor to F. A. Berner.

## New Garages

F. C. White and W. H. Davidson, Zuenemo, Kan.  
Routzong & Cook.....California, Mo.  
Moore Brothers and Walker...Trenton, Mo.  
The Manhattan Tire Exchange,  
Manhattan, Kan.

Arch Irwin.....Topeka, Kan.  
Robnett Brothers .....Durant, Okla.  
C. C. Edwards.....Waco, Tex.  
I. B. White.....Alexandria, La.  
Gus D. Revol.....New Orleans, La.  
Fletcher & Ash.....Circleville, Kan.  
E. E. Sharp.....Goff, Kan.  
Moore & Potter.....Marysville, Kan.  
Bowers & Boswell.....Washington, Kan.  
Garland & Son.....Archie, Mo.  
J. F. Cook, D. E. Routzong..California, Mo.  
H. Young .....Sikestown, Mo.  
M. L. Meed Motor Co. (70 x 120),  
Ellsworth, Kan.

George Neff (\$6,000, remodelled),  
Kansas City, Mo.

Frank G. Boble (remodelled, \$3,000),  
St. Louis, Mo.

## PACIFIC COAST

Farnsworth & Callahan have opened an accessory store at Fourth and East Santa Clara Streets, San Jose, Cal.

Earle C. Anthony, Inc., has moved to new premises on South First Street, San Jose.

The Reliance Garage and Machine Shop has been opened at Mountain View, Cal.

The Mountain View Vulcanizing Works has been established at 283 Castro Street, Mountain View, Cal.

The Economy Tire Co., with a stock of factory seconds, has opened a store at 146 West Santa Clara Street, San Jose.

C. H. Culp, Monterey, Cal., has opened Dodge salesrooms and a service station at Mummas and Fremont Streets.

J. M. Bussey has repurchased the garage at 425 Lighthouse Avenue, New Monterey, Cal., and adopted the name of Bussey's Garage.

J. R. Gibson has opened a tire store and vulcanizing shop at 51 B Street, San Mateo, Cal.

The Wilson Tire Co. has moved to the corner of Market and Santa Clara Streets, San Jose, Cal.

The San Jose Tractor and Truck Company has leased salesrooms and service station at 445 West Santa Clara Street, San Jose, Cal.

The Best Tire Shop has been opened at 146 North California Street, Stockton, by Lee Fletcher.

A. F. Marquis has purchased an interest in Zehender's Garage, San Mateo, Cal.

N. E. Owens has formed a partnership with R. W. Davis and the firm has opened a repairshop at 218 East Channel Street, Stockton.

C. Redwine has secured the agency for the Willisy-Knight and Overland and established salesrooms under the name of Mountain View Motor Company at 242 Castro Street, Mountain View, Cal.

The Salinas Vulcanizing Co. has moved to 352 Main Street, Salinas, Cal.

Sidney Ruthven has purchased his partner's interest in the Ruthven & Cerrano Garage at Monterey, Cal., and renamed it Mission Garage.

A. Reinis has established the Reliable Auto Wrecking & Junk Co. at 258 West Santa Clara Street, San Jose, Cal.

The Noggle Electric Works, Monterey, Cal., has erected a new building devoted to automobile electrical work, and designed as a Prest-O-Lite service station.

The Field Motor Car Co., 400 South First Street, San Jose, Cal., has added the Nash car and truck to its line.

Theodore Fields, operating as the San Jose Motor Co., has leased the salesrooms at 218 South First Street, San Jose, and will handle the Grant Six and Premier.

Lord & Close has been dissolved and F. H. Lord continues as Kelly-Springfield tire distributor in new premises at 347 South First Street, San Jose.

The Consolidated Garage Co., First and San Carlos Streets, San Jose, has secured the agency for the Maxwell.

The Reliable Tire Repairshop has been opened at 151 East Santa Clara Street, San Jose.

E. L. Smith and A. R. Smith have established Smith's Tire Shop at Campbell, Cal.

#### NORTHWEST

J. E. Sumney, Primghar, Iowa, has bought the interest of Leo Mills in the Primghar Auto Co. garage.

Walter Overton, Alliance, Neb., has bought the Martin-King garage.

G. H. Talbert, Palsade, Neb., has bought the Wilson Garage.

E. R. Polly, Homer, Neb., has bought the Ideal Garage from Glen Dunlap.

Johnson Brothers, Omaha, Neb., have bought the Riverdale Garage, Riverdale, Neb., from Dan Deets.

R. B. Small and Jack Rogers, Julesburg, Col., have bought the Homer Service Station, Homer, Neb., from William Dell.

F. O. Wixson, Beaver City, Neb., has moved his establishment to Wilsonville, Neb.

Adolph Paul, Atlantic, Iowa, has opened a repairshop.

James Pierce, Alliance, Neb., has bought the garage of Schwabe Brothers.

Joseph Sypal, Brainard, Neb., has bought the garage of Olson Brothers.

Ed Luedke, Deshler, Neb., has bought the interest of Folly Franzen in the Deshler Garage.

Horace Dugan, Jackson, Neb., has bought the Jackson Garage from Herbert Kinney.

M. F. Maynard, Chappell, Neb., has bought the Searle Garage, Ogallala, Neb.

J. C. and J. W. Myers, York, Neb., have bought the York Tire & Repair Co. from Mathiesen & Martin.

Lee Gibson, Carroll, Neb., has bought the West Garage.

R. A. Malvern, Omaha, Neb., has bought the Delco Exide service station from L. Hiller.

The Auto Electric Service Co., Omaha, Neb., has moved for the third time this year into larger quarters at 2205 Farnam Street.

Crumbles & Van Doran Co., Omaha, Neb., have moved to new quarters at 408 South Nineteenth Street.

R. C. Peterson Motor Co., Omaha, Neb., has moved into a new location at 2204 Farnam Street.

Nebraska Federal Truck Co., Lincoln, Neb., has built a new salesroom at 1338 P Street.

Claude Barrett, Eagle, Neb., has bought the Eagle Garage from Frank Lanning.

Anton Tunberg, Hooper, Neb., has bought the interest of his partner in the firm of Tunberg & Reetz.

E. E. Huffman, Hildreth, Neb., has bought the interest of his partner in the Blank & Huffman Garage.

Gene Conrad, Obert, Neb., has bought the interest of Arch B. Grantham in the Obert Garage.

W. J. Willeford, Tobias, Neb., is remodeling and enlarging his garage.

C. O. Mitchell, Wayne, Neb., has bought the Sederstrom Garage.

Otto Quandt, Castana, Iowa, has bought the Gingles Garage.

B. F. Thompson, Marengo, Iowa, has traded for an interest in the East Side Garage.

The J. W. Smith Motor Co., Cedar Rapids, Iowa, will suspend business September 1, and its garage room will be taken over by H. D. Miller, Buick distributor.

William Heater, Greene, Iowa, has disposed of his interest in the firm of Heater & Scott.

F. W. Schlotterbeck, Guthrie Center, Iowa, has bought an interest in the Wilson Brothers Garage.

## Injected Patriotism Into Window Display



*The Ellert Rubber Co., 1307 Sutter Street, San Francisco, used this display July 4. Back of the miniature Statue of Liberty is a map of the Greater New York section with a mark showing Bedloe's Island, on which the statue stands. It is now flood-lighted, giving a startling effect at night*

F. J. Pickrell, Palo, Iowa, has bought the P. H. Peterson Garage at Ryan, Iowa.

Hunter Brothers, Des Moines, have bought a half interest in the Waterloo Auto & Supply Co., distributors for Chandler, Oakland, Premier and Republic trucks.

#### New Garages

Kiel Garage ..... Council Bluffs, Iowa  
West Side Garage.....Hastings, Iowa  
John McGregor .....Perry, Iowa  
Motor Service and Supply Co.,  
Davenport, Iowa

Gottberg & Kahoun.....Weston, Neb.  
Elliott & Myers Co.....Superior, Neb.  
Mrs. L. A. Tracey.....Sheridan, Wyo.

#### EAST

The Hartford Scripps-Booth Co. has been organized at Hartford, Conn., to handle Scripps-Booth cars in this territory. The capital stock is \$50,000. The incorporators are A. C. Hine, R. J. Flynn and N. E. Pierce. A. C. Hine is the head of the A. C. Hine Co., Cole and Oakland agency; Robert J. Flynn is retail sales manager of Willys-Overland, Inc., and was formerly on the Oakland wholesale selling staff, and N. E. Pierce is a Bristol lawyer. Business will be started September 1.

#### CANADA

Walker-Vallance, Ltd., Hamilton, Ont., has decided to enter the jobbing field. W. C. Hunter is in charge of the wholesale department.

#### NEW TRUCK DEALERS

Commercial Truck & Tractor Co., Omaha, Neb. (Acme, Douglas and Ranier).

J. F. Plunkett, Omaha, Neb. (Fulton).

The Oldsmobile Co. of Ohio, Cleveland, has been appointed distributor for the Acason truck.

The Puritan Machine Co., Detroit, has taken over the complete service of the Alco cars and trucks formerly made by the American Locomotive Co.

Frank W. Horgan, Dodge and Chandler dealer at Salinas, Cal., has added a truck department and will deal in Service Trucks.

The McGinnis Brothers Co., Baltimore, has been appointed distributor of the Columbia truck and trailer.

Nebraska Federal Truck Co., Lincoln, Neb., has opened a branch at Omaha, Neb., taking quarters at 2417 Farnam Street.

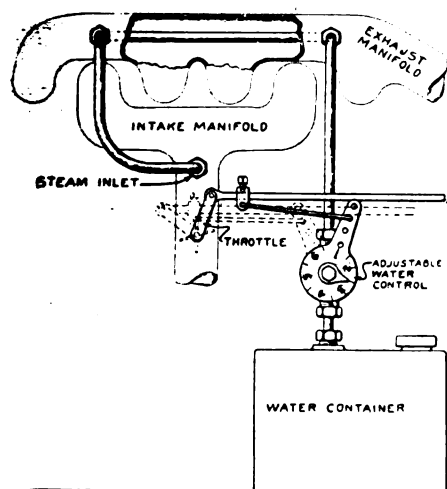
#### School for Mechanics

ROCK ISLAND, ILL., Aug. 25—Further details were outlined at last week's meeting of the Tri-Cities Automobile Trade Association in relation to the proposed school of instruction for motor mechanics. It was proposed that all car owners, prospective chauffeurs, repairmen and also women and all other persons who have anything to do or contemplate having anything to do with motor vehicles, be admitted to the school. It was brought out that so many of the expert mechanics have been drafted into the army or government repair or construction service, that the garages are short-handed and must take steps to replenish the supply of workers.

It becomes more necessary every day, garage owners assert, for the owners and drivers of motor cars thoroughly to understand the mechanism of the cars they handle and be in a position to make repairs with as little trained assistance as possible from garagemen.

All instruction here will be free of charge. The details of the schools have been left to Victor Kropf, commissioner of the association, and he will announce a definite program soon. Wayne S. Bashaw, of Davenport, was elected secretary of the Tri-Cities association to fill the vacancy caused by the resignation of Thomas A. Coughlin, who entered military service.

# Automotive Equipment



## DOUGLASS STEAM GENERATOR FOR MANIFOLD INJECTION

A steam generator which obtains its heat from the exhaust manifold and is automatic in supplying the proper quantity of steam, according to the throttle opening. The water from which the steam is generated is drawn from a tank and the amount sucked up is regulated by a needle valve which is opened when the throttle is opened and

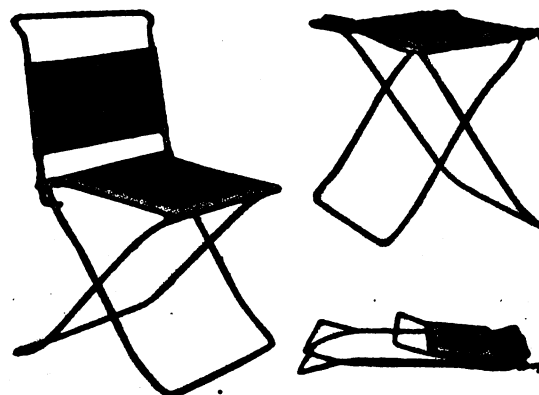
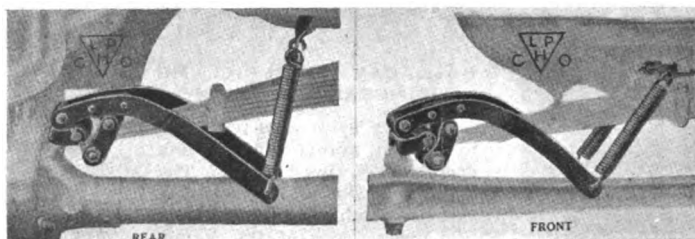
closed when the throttle rod moves in the other direction. A portion of the pipe passed into the exhaust manifold and out again and the heat thus supplied generates the steam.—Douglass Steam Generator Co., 566 East Genesee Street, Syracuse, N. Y.

## MCKINNON FOLDING AUTOMOBILE SEATS

Folding tonneau seats with round steel welded frames and

## HALLADAY FLEX-LEVERS FOR FORDS

Lever-type shock absorbers for Fords which can be applied without turning the spring perches by simply removing the spring shackles. The operation does not require special tools and can be accomplished in a short time. The principle of operation is a magnification of spring action through the medium of the spring arms and the long coil springs. Price \$10 per set of four.—L. P. Halladay Co., Streator, Ill.



brown duck or art leather upholstery. The seat is 10½ x 11 in. and the seat is 16 in. high. It folds into a compact space.

Price varies with the finish and style of upholstery from \$2.30 to \$4.24. — McKinnon Dash Co., Buffalo, N. Y.

## Dyneto Farm Light and Power Plant

A PLANT, complete with engine, which together with the generator and switchboard is mounted on a steel base and the batteries are placed wherever convenient. The Dyneto Electric Corp., Syracuse, N. Y., maker of the outfit, is prepared to furnish it in three sizes known as Nos. 5, 7 and 9, the differences being mainly in battery capacity. The price of No. 5 outfit, which has a 53-amp.-hr. battery, is \$340; No. 7, 80-amp.-hr., \$350, and No. 9, 110-amp.-hr., \$395.

The engine is light weight and compact, the fuel being contained in a tank which is an integral part of the base, and the entire water supply is in a hopper which is cast around the cylinder, and it is stated that this construction prevents damage to the system in case of freezing. Ignition is by high-tension spark, the current being taken from three of the storage cells. A governor of the hit-and-miss type regulates the

fuel supply so that only enough can be drawn to keep the engine up to normal speed.

The generator is entirely enclosed and the armature turns on ball bearings. The commutator is large and the brushes accessible. The rating is 15 amperes at 32-40 volts.

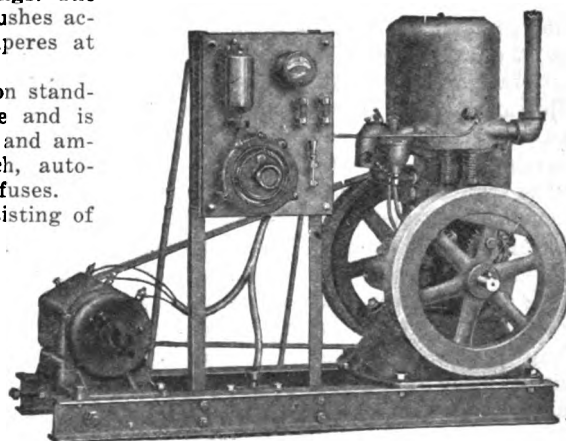
The switchboard is mounted on standards attached to the steel base and is equipped with combination volt and ammeter, rheostat, ignition switch, automatic cut-out and two main-line fuses.

The battery is a Willard, consisting of sixteen cells, assembled, sealed and charged ready for use.

The jars are of glass and are sealed with compound.

The engine is started by using the battery current through the generator, which

acts then as a motor and starts the engine going. If desired, the plant can be supplied without the engine.



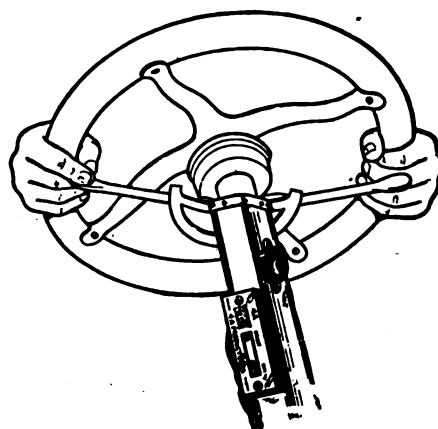
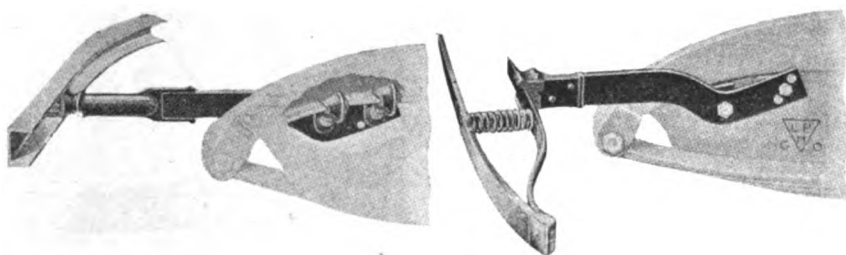


#### BRADY MOTOR-DRIVEN GASOLINE PUMP

A motor-driven gasoline dispenser in which the measuring pump is driven by a  $\frac{1}{4}$ -hp. electric motor instead of by hand. A visible dial indicates the quantity delivered through the hose. The motor and wiring are entirely enclosed in the base in accordance with underwriters' rules. The dispenser is of suitable design for curb use or to be placed against the outside wall of the garage.—Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.

#### HALLADAY UNDER-CLAMP BUMPERS NOS. 121-124

Bumpers to fit cars protected by splash aprons and having drop-front spring hangers. The fittings consist of two separate clamps which clamp rigidly on the lower flange of the frame. To these clamps a steel bar is securely bolted, this bar passing on the outside of the frame. Will also fit the rear of many makes of cars having rear extending frames. Prices range from \$8.25 to \$13.—L. P. Halladay Co., Streator, Ill.

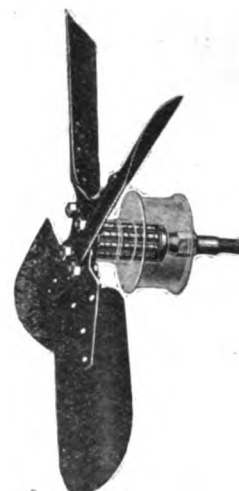


#### RESILONITE TIRE FILLER

An elastic tire filler which is claimed not to deteriorate, oxidize or rot. Made for all sizes of casings from 28 x 3 in. to 37 x 5 in. at prices from \$22 to \$61 per set of two tires.—National Synthetic Rubber Co., Inc., 1791 Broadway, New York City.

#### HY-DUTY FAN

A fan designed for tractor, truck and car use, mounted on Hyatt roller bearings for taking the radial load and having a bronze-to-steel washer arrangement to take the thrust load. Made entirely from pressed steel and the bearings are enclosed in an oil-tight and dust-proof housing. The blades are curved to give the maximum air current with a minimum consumption of power.—Automotive Parts Co., 1509-11 Bates Street, Indianapolis, Ind.



## Jupiter Junior Farm Lighting and Power Plant

A COMPLETE plant for farm lighting and power without the engine. It is mounted on skids and comprises battery, generator and switchboard. The wiring is all in place and requires only to be connected to the house circuit and the generator to be belted up to an engine. The generator has a rating of 15 amperes and the armature revolves on Norma ball bearings. A slotted base with screw adjustment allows for tightening the belt and the brush area is sufficient to prevent sparking at the commutator.

The switchboard is of slate and has an ammeter, volt-meter, fuses and other necessary attachments. The battery consists of sealed glass cells with large acid space and sediment chamber at the bottom. An improved safety connecting strap is used to connect the cells, and this is made in such a way that it is impossible for any one to connect up the

cells in reverse, as there is a dowel pin in the positive strap which fits into a hole in the negative strap.

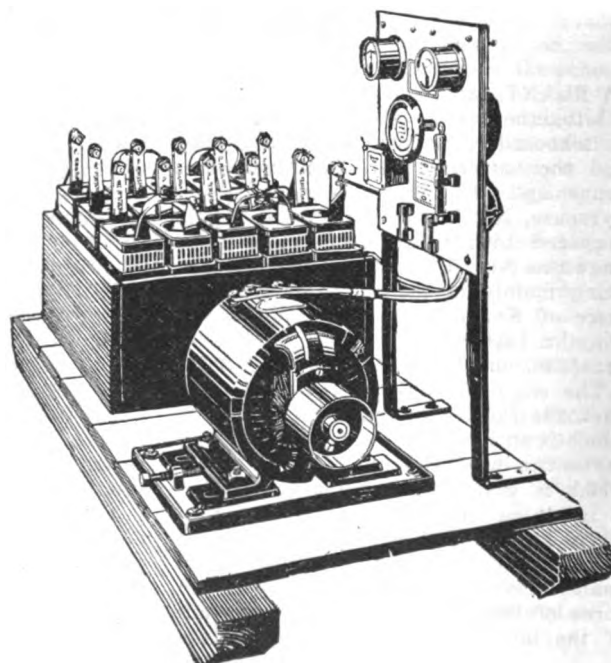
The Junior plants are made in three capacities, rated at 30 volts.

20-watt lamps

from battery

No. (Eight hours)	Price
1..... 8	\$200
2..... 12	230
3..... 16	255

The generator speed is 1850 r.p.m. and the diameter of the belt pulley is 4 in. This outfit is made by the Perfection Storage Battery Co., 2901 Indiana Avenue, Chicago, Ill.





# Dual Valves in New Pierce-Arrow

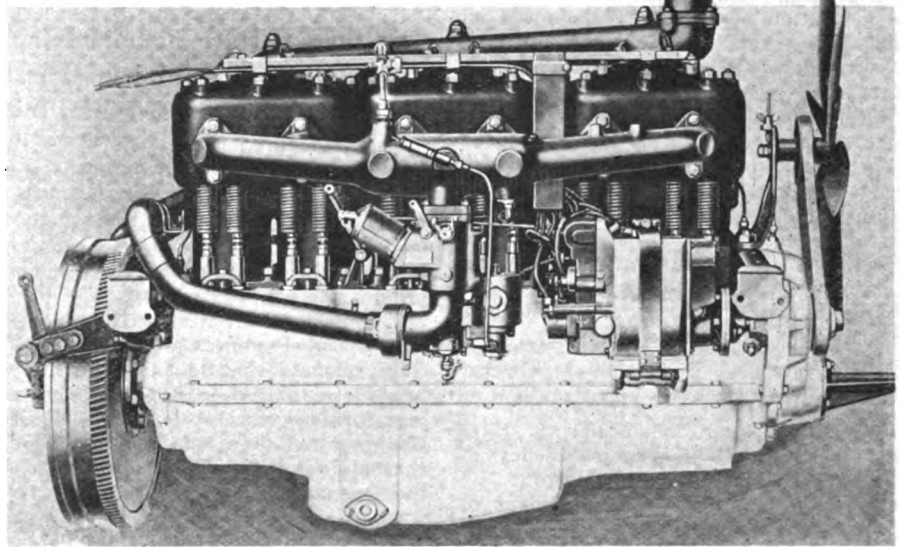
*Better Acceleration and More Power in Series 5 Cars—Standard Open Models List at \$6,500*

IT is not often in these strenuous times, when automobile selling problems are greatly overshadowed by problems of production, that an old established concern makes a radical departure in design, and for this reason the decision of the Pierce-Arrow Motor Car Co. to market a dual-valve six is of special interest.

The chassis to which the new engine is fitted may carry nearly twenty different body styles, of which the roadster sells for \$6,400 and the five and seven-passenger models at \$6,500, these prices being exclusive of the war tax. All models have 142-in. wheelbase and regular equipment includes a speedometer, shock absorbers, demountable rims, clock and engine-driven tire pump.

In the experience of the Pierce company, the demand of the buying public is for better high gear performance. To meet this demand in the 48 hp. model the company built various types of 6, 8 and 12-cylinder engines, and as a result of these experiments it is now more than ever convinced that a 6-cylinder engine is the preferable type for passenger vehicles.

It was found that the greater power developed in some of the newly-designed engines, especially at higher speeds, was due almost entirely to the large size of the valves, in proportion to the cylinder displacement volume, this insuring a high volumetric efficiency.



*The intake side of the new Pierce-Arrow 24-valve engine does not appear unusual, though the additional valves give much greater volumetric efficiency and hence more power*

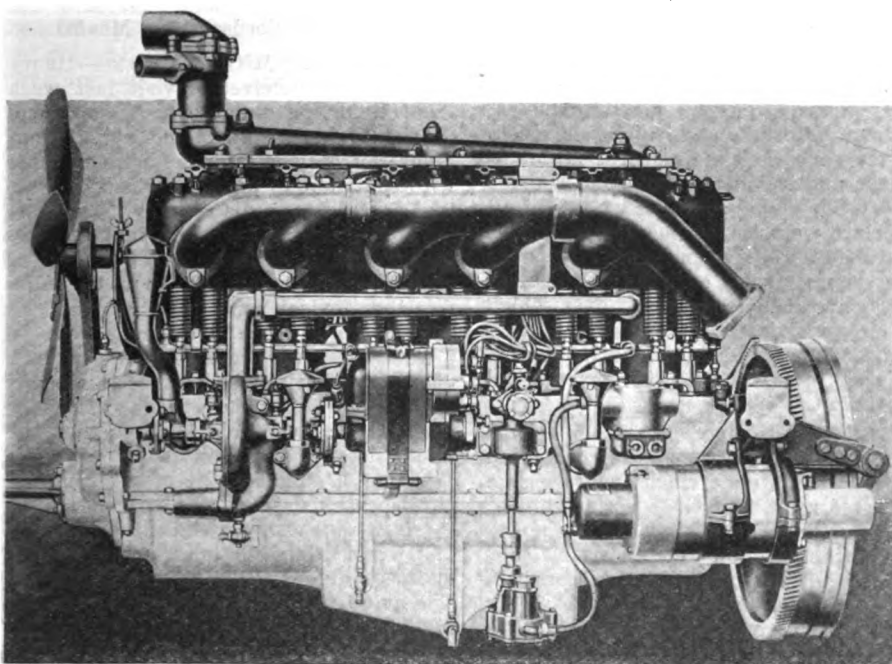
In order to obtain as great valve capacity in the 6-cylinder,  $4\frac{1}{2} \times 5\frac{1}{2}$  in. engine, with which its 48 hp. model has been equipped, as found in some of these high-speed engines, it would have been necessary to use 3 in. valves with a  $\frac{3}{8}$  in. lift. With a greater lift, of course, a smaller diameter valve would have sufficed, but it was figured that  $\frac{3}{8}$  in. was the maximum lift which would permit of reasonably quiet valve action. This size of valves, however, is prohibitive, because of the noise due to the heavy springs required to close them promptly, and also on account of the tendency of the valve heads to warp out of shape.

In standard practice it is seldom that a clear diameter of valve of more than half the cylinder bore is used. For  $4\frac{1}{2}$  in. bore cylinder this gives a  $2\frac{1}{4}$  in. valve, which is substantially what the Pierce company has been using on its 48 hp. engine in the past. The conclusion was therefore reached that in order to get the maximum possible power out of the cylinders it would be necessary to use double inlet and double exhaust valves. The valves used have a clear diameter of  $1\frac{1}{2}$  in., with a  $\frac{3}{8}$  in. lift, thus giving the same opening area as the single valve of 3 in. diameter with  $\frac{3}{8}$  in. lift.

The T-head cylinder construction, which has been championed by the Pierce company for so many years, is retained, but with dual valves it became necessary to make use of detachable heads. Among other advantages claimed for the dual valve construction, aside from increased output from the same size of cylinders, are very quiet valve action due to the use of light valve springs, increased fuel economy and less frequent need for re-grinding valves. There is also said to be a remarkable improvement in acceleration.

The modified three-point support, which has been used by the Pierce company for years, is retained. Camshaft drive is by helical spur gears. Water circulation is effected by a centrifugal pump and engine lubrication by the pressure system through oil passages drilled in the crankshaft. The oil pump is the gear type.

A carburetor of the Pierce company's own make is fitted and is of the automatic type. Fuel is fed to the carburetor by pressure. Ignition is by a Bosch high-tension magneto with a Westinghouse battery system as reserve. The two systems are independent and connect to separate sets of spark plugs. The spark timing is hand controlled. The 6-volt



*The total area of each pair of valves, intake and exhaust, is 3 in., which is very great considering the bore of the cylinder, which is but  $4\frac{1}{2}$  in. The lift of the valves is  $\frac{3}{8}$  in.*

starting and lighting system is Westinghouse, comprising a separate generator and starting motor. All wiring is on the ground return principle. The battery ignition distributor is mounted on the generator. Engagement of the starter drive is effected magnetically. Exide and Willard batteries are used.

From the engine power is transmitted through a cone clutch to the four-speed selective sliding gear transmission, which is located amidships. Final drive is by spiral bevel gears. The driving thrust is taken on the springs and the torque reaction on a torque arm. A gear reduction of 3.53:1 is obtained through the rear axle gears. The axle is semi-floating and is the Pierce company's own make.

#### Hare Made Packard Vice-President

DETROIT, Aug. 26—Emlen S. Hare has been elected to vice-presidency of the Packard Motor Car Co., Detroit. He will retain his position as president of the Packard branch in New York but will remove to Detroit within a few weeks. The rapid development of the Packard company's work for the government has absorbed President Alvan Macauley's time and energies to an extent that warranted the creation of the new office for which Hare has been chosen. He joined the Packard forces early in 1916 in the capacity of special sales representative of both the New York and Philadelphia branches. Within 6 months he was given supervision of the truck department of the Packard Motor Co. of New York. A month later he was promoted to general manager and later was made president.

#### Not Representing N. A. D. A.

ST. LOUIS, Aug. 26—The N. A. D. A. wishes to make plain that solicitation of members for the National Association by representatives of "The Western Automobile Trade Association" of the Durham Building, Denver, is entirely without the knowledge of any officer of the National. Reports from Montana and other western states have it that representatives of this association have obtained membership applications from a number of dealers, together with the membership fee, but that no communication from this "association" has reached the home office.

An automobile traveling salesman who is devoting much energy to the N. A. D. A. campaign, has reported to the N. A. D. A. office that he met Ellsworth Ellis, who represented himself as "Field Manager and Director of Legislation" for "The Western Automobile Trade Association," and who avowed his purpose of "working to cement the motor car industry for common good." He had been promising dealers whom he approached much material benefit in the way of state and national legislation and freight rate protests. His promises were much more liberal than those of the National Association. None of the memberships he obtained have been registered at the N. A. D. A. offices and no communication of any kind from Ellis or any of his associates has been received.

## Motor Transport Corps Controls Army Vehicles

### New Body to Have Complete Supervision Over Everything on Wheels —Headed by Drake

WASHINGTON, Aug. 26—The Motor Transport Corps of the United States Army, completely controlling all motorized vehicles excepting creeper-type tractors, has been formed by a Presidential order.

This department is directly responsible to General Peyton C. March, Chief of Staff, and to the General Staff. It is headed by Brig.-Gen. C. B. Drake, who was formerly a colonel under Brig.-Gen. Chauncy B. Baker, who was in charge of the original Motor Transport Section of the Quartermaster Department.

The new order abolishes the present Motor Transport Service of the Quartermaster Corps, which is headed by Col. Fred Glover. Colonel Glover will remain with the Quartermaster Department. Col. E. S. George, who was second in command under Glover, will be transferred back to the Signal Corps or possibly to the Air Service.

Col. James F. Furlow, who was lieutenant-colonel under General Baker, will be second in command of the new Corps. Colonel Furlow is now a colonel in the General Staff and will be detailed from it, together with Lieut.-Col. Seamon, to the Motor Transport Corps. Lieut.-Col. Seamon will be third in command. It is likely that General Drake will have the title of Director, and Colonel Furlow, Deputy Director. It is considered probable that the original AA  $\frac{3}{4}$ -ton truck and the A  $1\frac{1}{2}$ -ton truck will be reinstated in the program, and will be ordered in large quantities. The B 3-ton truck will, of course, be retained.

The new Corps will have complete charge of the technical supervision of all motor vehicles, design, production, procurement, storage and supply of them and the parts, and their operation, maintenance and salvage. Provision is made in the order giving complete control of all motorized vehicles to the Corps except those used for special purposes by various army departments, such as ambulances for the medical department, over which the Motor Transport Corps will merely maintain supervision after they have been produced and delivered to the medical department.

The Motor Transport Board, which was created earlier this year and is composed of a representative of each army division interested in or using motorized vehicles, will be retained to participate in the design or construction of vehicles by suggestion. Officers of the Motor Transport Corps will be detailed to each army division, corps and department to be in command of the Motor Transport Corps within the limits of that division.

All existing contracts for motor vehicles, motor vehicle equipment and supplies, maintained, operating and repairing

of motor vehicles will be taken over by the Motor Transport Corps, which will make all future purchases and disbursements.

WASHINGTON, Aug. 26—Following the announcement elsewhere in Motor World of the reorganization of the motorized vehicle section of the army under the direction of the original regime which favored the standardized truck program, the following list of truck contracts has been made public. These contracts were made shortly before the reorganization took place and while the Motor Transport Service was under Col. F. M. Clover. The contracts follow:

White Co., Cleveland, Ohio, 8000 "A" (White)  $1\frac{1}{2}$ -ton trucks.

Peerless Motor Car Co., Cleveland, 3000 "A" (White)  $1\frac{1}{2}$ -ton trucks.

Packard Motor Car Co., Detroit, 3000 "A"  $1\frac{1}{2}$ -ton trucks.

Pierce-Arrow Motor Car Co., Buffalo, 3000 "A" (White)  $1\frac{1}{2}$ -ton trucks.

These "A" trucks which were contracted for are the White  $1\frac{1}{2}$ -ton trucks which were substituted for the original standardized "A" truck following tests held by Col. Glover and the Ordnance Department.

These manufacturers have been allowed a price of \$2,480 each for the trucks and the Peerless, Packard and Pierce-Arrow companies have been allowed an additional \$100 for each truck for tool costs.

Col. C. B. Drake whose nomination for Brigadier-General has been made is already in active charge of the new Motor Transport Corps and Colonels Glover and George have been transferred to other army divisions. Col. Drake is at this time working out the organization of the new Corps, and probably will have it completed within the next few weeks.

#### Carload of Fordsons for Mexico

DEARBORN, MICH., Aug. 26—Henry Ford & Son received a visit last week from Randolph Robertson, Vice Consul of the United States who came from Monterey, Mexico, to make arrangements with the plant to have a carload of tractors sent down to his country. This carload, with the two tractors sent recently to President Carranza, makes a total of nine Fordsons that will soon be doing work on Mexican soil.

Two expert men are being sent to Mexico to give demonstrations with a view of educating the natives in modern methods of agriculture. The carload of tractors has been sold in Mexico at the fixed factory price, viz., \$750.

Owing to the shortage of pig iron and chrome nickel steel, the production of the plant has dropped slightly during the last week. Only 803 machines were produced as against 919 the week previous. The average daily production now is 125 to 130.

Plans for the new plant at Hamilton, Ohio, have been drawn and are now awaiting the O.K. of C. E. Sorenson, manager of the company, who will soon go to the town to start building activities.

## Deluge of Inquiries Swamps Truck Makers

### Dealers All Over Country Seeking Truck and Tractor Agencies— Some Not Sincere

DETROIT, Aug. 24—Truck and tractor manufacturers have been deluged with inquiries from passenger car dealers seeking to take agencies for truck or tractor lines. These inquiries have been coming to the plants for some time but a number of makers claim that the recent announcement of the War Industries Board indicating a probable curtailment of passenger car manufacture has done much to stimulate inquiries. Not only do the inquiries come through the mail but many dealers visit truck plants in person.

A passenger car dealer from the Mississippi Valley—the central agricultural district—came to the Denby Motor Truck Co. last week and was willing to buy and pay for 100 trucks on the spot. The Acason Motor Truck Co. is lining up many new dealers, many of them passenger car agents. Recently three large well-known distributors of passenger cars have taken on truck lines. They previously handled cars exclusively.

Inquiries are coming to the Commerce Motor Truck Co. from all sections of the country but particularly from the Northeast, South and West. This company reports that the announcement of car curtailment caused no stimulation of inquiries. Nor did the Acason find this the case.

It is the opinion of many truck manufacturers that inquiries from passenger car dealers received their stimulus some time ago when producers of light trucks approached exclusive dealers of passenger cars with their lines. It awakened in them the possibilities of the truck field and caused them to look around and make investigations of their own accord. Some of these dealers after making a survey of the situation arrived at the conclusion that they should handle the heavier type trucks. This is given as the reason by many truck manufacturers why they observed no marked increase in the number of inquiries coming in.

Truck makers are not pleased, however, with a large number of the inquiries they receive. The senders do not manifest sincerity in the proposition and the inquiries indicate an inclination on the part of the dealers to use the truck line as would a drowning man grasping for something to save his life. It is expressed by a number of truck manufacturers that unless the passenger car dealer goes into the field with his eyes open and his feet on the ground he is better out of it.

The Cleveland Tractor Co. has closed a number of deals with passenger car dealers. Henry Ford & Son is also receiving inquiries from all over the country. But to represent this company in the tractor field the chances are nil, as the output of the plant is completely sold out and no further orders are being accepted. The

company recently received requests from Oklahoma for 6000 to 8000 Fordsons, from Minnesota and California 10,000 each, and from Iowa, Nebraska and South Dakota comes word that they could use the entire output of the factory.

### Selling Trucks on Business Basis

BOSTON, Aug. 24—One of the results of war conservation is the attitude being adopted by some of the truck dealers in discontinuing free demonstrations these days. In the past a clever man with a rush order on his hands and unable to move it with horse-drawn vehicles would send a suggestion in a roundabout way to truck dealers that he was in the market for a truck. And salesmen would call on the prospect. He wanted to be shown. So he would tell about some loads he was hauling, and for the next few days trucks would be competing against each other, giving the man free service.

A. H. Sowers, who handles the Fulton, got up against it, and now he has stopped it in his organization, and he is trying to get the dealers' association to back him up to put an end to it.

### East St. Louis Freight Situation

ST. LOUIS, Aug. 26—Much interest was aroused here last Thursday by the announcement of Edwin S. Conway, chairman of the Board of Water Resource Advisers, that a chain of boats would begin freight carrying operations between Chicago and St. Louis within 30 days. This is possible by the Chicago Drainage Canal, Illinois River and the Mississippi River. Freight transportation from here south is assured early next month. It is believed that this will mean much in the way of relieving the freight congestion that hit the motor trade so hard last winter. This is of especial interest to Ford dealers who are now dependent upon the Chicago assembly plant for all cars. It is believed also that it will mean much to those dealers who are dependent upon Detroit and other Michigan points for cars.

### St. Louis Truck Men to Organize

ST. LOUIS, Aug. 26—Twenty truck selling and service firms were represented at a meeting held Wednesday at the Hotel Statler to further the organization of an association, which was outlined at a meeting held last week. Charles E. Lightfoot, manager of the G. M. C. branch, presided. The name Commercial Car and Service Association was adopted and Allen Baker, Federal; L. R. Amrine, Scudder, and H. C. Bailey, International Mack, were named a committee to confer with directors of the St. Louis Automobile Manufacturers' and Dealers' Association with a view of becoming a bureau of the older company. Jos. E. Schlecht, president of the Manufacturers' and Dealers' Association, was the chief speaker. He explained the work the association has accomplished.

## Farmers' Co-operative Bodies Helping Sales

### Point Out Advantages of Trucks for Moving Farm Produce and Urge Their Use

KANSAS CITY, Aug. 26—Co-operative farmers' organizations in Missouri and Kansas seem likely to be important factors in bringing farmers to the use of trucks.

"Every farmer will have to own at least a 1-ton truck," said H. F. Fricke, secretary-treasurer of the Sedalia Farmers' Co-operative Packing & Produce Co. "Any farmer can afford to own a truck to bring his products to market when he has a load to take back with him. And with the co-operative companies the farmers usually have loads to take back."

The particular advantage of a truck for a farmer belonging to one of these companies is that he brings most of his products to the same place—and gets most of his feed and other farm and household supplies at this place also. Nearly every co-operative organization in the two states is said to be planning now to extend its lines to come near filling the farmer's needs—and extending its scope of activities to take more and more of his products.

The Sedalia organization took over a packing plant there about a year ago; it is now slaughtering 150 cattle and 300 hogs a week—a large proportion of which are brought to the plant by motor truck. Many of the trucks used are owned by transfer men in the small towns, others run out of Sedalia, and others are owned by farmers. Mr. Fricke is himself a farmer, and formerly operated a 3-ton Avery truck in connection with his farm and a mill. He knows how to advise farmers on the use of trucks.

This Sedalia company is capitalized at \$50,000; it is planning to increase its capital and expand its operations. It now handles poultry and dairy products from farmers, and sells them bulky supplies such as fertilizer and feed. In many cases the orders are shipped by railroad to the farmer's nearest station, and not through the Sedalia headquarters.

"This community has been seriously affected by a milk shortage this summer," said Fricke. "The trouble has been rather in lack of means to bring milk in than in low production in the district. If the farmers had their own trucks they could bring their products to market promptly, and when most needed by the consumers. We expect to see our members bringing their own production here, from a distance of 55 miles, over our dirt roads. Stock comes to us now more than 40 miles by truck. Possibly some of the members will buy trucks for common use among the members of a community. Our organization will not put trucks into service to bring in the products of members or to deliver to them."

The Farmers' Clearing House at Warrensburg was organized in December, 1917; it runs a retail store at Warrensburg and a shipping station for owners' products, shipping poultry, live stock, butter, vegetables and hay. A local station of a Kansas City dairy company now receives milk, but lack of service in collecting it is causing the co-operative organization to plan the handling of this commodity also, which farmers could bring in, or for which a co-operative collection system could be arranged.

This Clearing House is planning to extend its service to farmers in the commodities they have to buy. It has sold them engines and is going into the shoe and men's clothing and furnishing business. It may also handle motor accessories. Many of the members bring in their products in trucks or motor cars, and take out their farm and household supplies—getting credit for distribution at the end of the year on both sales and purchases.

The co-operative movement among farmers has heretofore been almost a failure in these states. The stores could not compete with individual retailers, in goods or service. War conditions and motor vehicles are changing the prospect, however.

#### To Train Girl Mechanics

QUINCY, ILL., Aug. 26—Motor mechanics classes for Quincy girls are being organized here. Mrs. H. O. Channon is in charge of the registration for the classes, and reports a large number have responded to the call. Two classes a week will be on the program for the present and the Overland Garage Co. has offered the use of its facilities for the classes. The Red Cross Motor Corps service in this territory is rapidly developing and the graduates of the mechanics school will be called into the service of the corps when they are proficient and ready for duty.

#### Build Ford Tractors in Mexico

MONTEREY, MEXICO, Aug. 26—Locations for two of the proposed tractor manufacturing plants which Henry Ford plans to construct in Mexico have been tentatively selected and only await the formal approval of the Carranza Government for final decision. One of the plants is to be at Monterey and the other at Guadalajara. It is stated that the project embraces also the establishment here of a large automobile assembling plant. In the contract entered into between Mr. Ford and the Mexican Government it is stipulated that all of the raw materials and finished products entering into the manufacture of the tractors and automobiles shall be of native production. No difficulty will be experienced in complying with this requirement, it is expected. Steel may be obtained; timber is available in abundance; cotton and other fibers may be had for fabrics; crude and refined rubber are produced in large quantities.

## Big Used Cars Wanted for Truck Conversion

### Boston Dealers Advertising for Them and Picking Them Up for the Future

BOSTON, Aug. 24—A few Boston dealers who have been watching the future with keen interest have been scouting around to pick up used cars of the larger sizes, with good engines of high horsepower, but they are not advertising them for sale, nor showing them in their buildings. The plan is to get a number of them for emergencies to be turned into trucks.

Dealers have noted that registrations in Massachusetts for the first 7 months of this year indicated that a few thousand cars must have been turned into commercial vehicles. And having read that the steel situation is critical enough to warrant a curtailment, perhaps, of truck making, too, while the railroads are discouraging short hauls, they feel that big used cars will have to be turned into trucks in the near future.

Working along these lines they have started the ball rolling, but they have not been shouting it from the rooftops. In fact, they do not want it known for fear there will be a rapid jump in the price of old cars on the part of the owners. There are hundreds of these machines in New England to-day, and owners who are worried about the war may be induced to part with them.

Some advertisements have appeared in Boston papers, and more will be used probably in the country papers to bring the machines in. The men who are working out these plans figure that the cost of selling will not be large and the machines will bring their purchase price as used cars anyway if they have to be sold to motorists rather than truck prospects, so that they have two chances to one to keep their organizations going.

#### Studebaker Gun Carriage Christened

DETROIT, Aug. 22—Over 2000 munition workers of the Studebaker factories, 250 of whom were women in shop overalls, celebrated in fitting style the christening of the first of many of the siege gun carriages which they will turn out during the next few months. The carriage was christened "Black Jack."

At 5 o'clock, headed by the Studebaker military band of forty pieces, they marched in military formation behind a detachment of United States naval forces to the big factory yard, where the giant gun carriage fully equipped and with its gun in place stood in readiness. Back of the gun itself on a platform erected for the occasion sat high officials of the United States Army and Navy, officials of the British Army, together with President A. R. Erskine and other officers of the Studebaker corporation. With Erskine on the platform were Major Guthrie, Ordnance Department,

Washington, D. C.; Major Owston, U. S. Ordnance Department; Major Cowterthwait, U. S. Ordnance Department; Ensign Evans, U. S. Navy; Fred J. Robinson, District Chief of the Ordnance Department, and Col. Macklem, of the British Army.

#### Colorado Out After Roads

DENVER, Aug. 26—Plans for extensive development of Colorado highways, promotion and regulation of motor truck transportation and a general advancement of the motor car industry in this territory have just been decided upon at a Denver meeting of the executive committee of the Colorado Good Roads Association and the legislative committee of the Colorado Association of County Commissioners. The four main steps to be urged by a statewide campaign are:

(1) An enabling act to give the people of the state an opportunity to vote on a bond issue for building and maintaining permanent highways throughout Colorado.

(2) A transferring from the general fund to the state highway fund of all receipts from the state inheritance tax, now amounting to about \$150,000 yearly.

(3) A doubling of the yearly motor car license fees, which are now far below those in effect in many states.

(4) State traffic regulations aimed to give control over the speed of motor trucks, width of tires and other factors vitally affecting the wear of highways.

#### Milwaukee-Chicago Truck Line

MILWAUKEE, Aug. 26—The first regular freight service by motor truck to be established between Milwaukee and Chicago was opened during the past week by the Motor Transportation Co. of Milwaukee, organized with a capital stock of \$100,000 by Milwaukee capital and Charles C. Newburn of Chicago. Four trucks, each of 3-ton capacity, are now being operated over the 90-mile route. Besides the terminal offices in Milwaukee and Chicago, the company will maintain stations at South Milwaukee, Racine, Kenosha and Waukegan for the handling of freight. The Milwaukee interests in the new company are represented by Charles A. Robinson and George D. Persons, formerly passenger engineers on the Milwaukee road. During the first few days of the operation of the new service no difficulty has been encountered in getting capacity loads, going and returning. In fact, much more freight has been offered than can be carried with the present equipment of four trucks, and the promoters expect to add as many more within a short time.

#### Yantis Plays the Host

QUINCY, ILL., Aug. 26—In honor of the opening of the new building at 609 and 611 Vermont that will house the sales, service and mechanical departments of the Quincy Overland Co. Manager D. Y. Yantis was the host at a dinner given at the Hotel Quincy to all the employees of the local branch.



## Want Tractor Exhibits at New England Fairs

### Two Dealers Already Have Staged Demonstrations and Others Plan to Do So

BOSTON, Aug. 24—Some effective work is being put in toward trying to develop tractor sales in New England. Plans are under way now to try to get some interest aroused to have tractor demonstrations at some of the numerous county fairs throughout New England in the fall. No section has a greater number of fairs for its size than the six states comprising the New England group.

Last week at Walpole, N. H., there was a tractor demonstration staged by F. N. Darling, of Keene. He is agent for some tractors, and after advertising the exhibition had 1200 people on hand.

They saw six different types do various stunts in a big field. The tractors exhibited were the Fordson, Titan, Avery, Case, Smith Form-A-Truck and the Cleveland. It proved very interesting to the people there, many of whom were farmers from the Connecticut Valley section. It was so well received that Darling is considering staging another exhibition later in the fall, when the crops are all in and he can get a bigger crowd.

A few days ago Mr. Ketchum, who has been sent to Boston by the Cleveland Tractor Co. as New England district manager, arranged an exhibition at the Brooks farm at Medford and Winchester, Mass. This is an enormous estate, covering a couple of square miles, and it is highly cultivated. Ketchum had one of the Cleveland tractors there, and it went through a lot of farm work. Now he is planning other demonstrations in conjunction with dealers throughout New England. He has been able to place a number of good agencies since he was sent to Boston.

### Fordson Tractor Test Result

CHICAGO, ILL., Aug. 26—Little by little the reports of the dynamometer and drawbar tests made at the Salina tractor demonstrations in August are being made public. Those manufacturers taking the tests were obliged to file a report with the association handling the demonstrations before the information could be made public.

The test of the Fordson in its 2-hr. economy plowing trials made with a two-furrow No. 7 Oliver plow showed that it plowed at a depth of 6 in. and in the 2 hours plowed 1.9 acres. This is at an average of .94 acre per hour. Kerosene was used throughout and the consumption showed 2.24 gal. per acre used. In all, 4.22 gal. were required for the 1.89 acres. The report shows that 4.88 gal. of water were used, or 2.58 gal. per acre.

While engaged in this test the Fordson

plowed at an average speed of 3.2 m.p.h. During the test 6 min. were consumed for stops and the net plowing time was 2 hr. and 1 min.

The report of the Fordson in the drawbar test shows that when plowing winter wheat stubble with two 14-in. Oliver plows the results were:

Gear	Draw-bar Pull	M.P.H.	Draw-bar H.P.
Low	1790	1.98	9.45
Second	1350	2.8	10.1
Second	1440	2.58	9.9

### Garford Truck Prices Advance

LIMA, OHIO, Aug. 20—The Garford Motor Truck Co. increased the prices of its trucks and tractors on Aug. 15 as follows:

TRUCKS			
Model	Ton Chassis	Old Price	New Price
75 C	1	\$2,100	\$2,500
66 B	1½	2,500	3,000
66 BL	1½	2,600	3,100
70 B	2	3,000	3,300
70 BL	2	3,100	3,400
77 B	3½	3,900	4,300
77 BL	3½	4,000	4,400
68	5	4,700	5,000
68 L	5	4,800	5,100
69	6	4,900	5,300
69 L	6	5,000	5,400

TRACTORS			
Model	Ton Tractor	Old Price	New Price
70 B	4½	\$3,100	\$3,400
77	7	4,000	4,400
68	10	4,800	5,100

### Cars and Tractors in One Exhibition

DES MOINES, Aug. 26—A combination exhibition of passenger cars, trucks and farm tractors is being staged this week in conjunction with the annual State Fair. Tractor demonstrations are held every day, and it is reported that many farmers are placing orders for early deliveries. The tractors exhibited include Case, Hart-Parr, Hercules, Appleton, Heider, Moline Universal, Wallis, Advance-Rumely, Fordson, Avery, Acme, Townsend and others.

### Shortage of Teamsters Boosts Truck Sales

KANSAS CITY, Aug. 26—The increasing shortage of teamsters is becoming an important factor in truck sales. The Israel Transfer Co., Kansas City, for instance, was unable to get enough teamsters to keep its horse-drawn vehicles going; the men nearly all wanted to become chauffeurs, or went to the war. The chauffeur's hours on duty are far shorter than the teamster's—the latter has to show up an hour earlier, and stay an hour later after work.

Familiarity with the trucking business, however, does not seem to be as important a qualification for service as does ability to handle a truck. Only two of the former teamsters employed by the Israel company were retained on trucks. The company finds that one truck will replace at least four teams—with consequent reduction in number of men that must be secured. There has been no difficulty this summer in securing chauffeurs.

## Bankers Were Misled by This Bond Salesman

### N.A.D.A. Quickly Squelches Exploiter of Alleged "Order" Preventing Loans to Dealers

NEW YORK, Aug. 26—Complaints from various localities concerning the action of a New York bond salesman that seriously affected the securing of loans by automobile dealers in Michigan and Wisconsin reached the National Automobile Dealers headquarters early in July, and the exploiter of the alleged "order," from the Treasury Department to bankers, curtailing loans to automobile dealers was hastily checked and the harmful impression created among bankers removed.

The bond salesman, named Smith, claimed to represent the New York Federal Reserve Bank. His plan of operation was to call meetings of the directors of several country banks and advise them that the Government preferred all surplus money eligible for loans be used for the purchase of Liberty Bonds representing the excess purchases of New York banks instead of being used for loans to automobile dealers.

The scheme was one to aid the New York banks in unloading their excess bond purchases, and despite its boldness and lack of verification, it was received without dispute by bankers. The effect on automobile loans was disastrous. The N. A. D. A. dispatched an investigator into the field for information. When informed that the bond salesman reported that he was speaking authoritatively as a representative of the Federal Reserve Bank, the following telegram was sent to J. D. McDougall, governor of the Federal Reserve Bank, Chicago, Ill.:

"Bond salesman named Smith, representing New York bank, calling meetings of bankers in Wisconsin. States definitely that Government has ordered that no loans be made to automobile dealers by state or national banks and that surplus must be invested in the Federal Reserve Banks or the Treasury Department."

This brought the following reply from Assistant Cashier L. C. Childs of the Federal Reserve Bank of Chicago:

"Your telegram of even date to Gov. McDougall has been referred to the writer for attention.

"We understand therefrom that representations have been made in meetings of Wisconsin bankers to the effect that the Government has ordered that bank loans be discontinued to automobile dealers, and that surplus be invested by the banks in Liberty Bonds. We would appreciate a letter from you giving us all the information which you have regarding such statements, and the occasions on which they were made. We are greatly interested in getting as definite information as possible on these points.

"While the Treasury Department has urged upon banks the necessity of a

*careful scrutiny of all credits, to the end that non-essential demands be cut down to a minimum, we have not been informed that any specific lines of business have been listed as non-essential."*

Members of the association are requested to advise the secretary's office of the appearance of bond salesmen making similar statements in other territory.

### Goodyear Claims Its Policies Not Understood

AKRON, Aug. 26—The Goodyear Tire & Rubber Co. in commenting on the charges made against it by the Federal Trade Commission claims that it has not required dealers to sell Goodyear products exclusively nor has it asked them to confine their service to Goodyear tires exclusively. The company has merely pointed out the necessity, from the consumer's standpoint, for this service, and has insisted that dealers upon signing company's contract agree to render the agreed service. The company further claims that it has made no effort to curtail or control or restrict the operations of dealers, simply insisting that the consumer must be served.

The complaint of the Federal Trade Commission is based on a preliminary investigation. As yet the Goodyear company is not aware of the nature of the investigation and has not had an opportunity to explain the facts in the case. When this opportunity is presented, the company feels confident that all the items in the charge will be cleared up.

To the company the whole problem gets back to the sincerity of its service station plan and the motive underlying it. The company believes that if the Federal Trade Commission now knew that the whole aim and effect of the company's policy is to aid tire users to conserve tires, get more mileage and hence cut down tire expense, this complaint would not have been made.

The plan has involved some instruction to users, some education as to the proper use of tires to get the maximum service from them, some inspection of tires, etc. All of this has meant personal contact with user, and this has necessitated the establishment of this service in convenient places. Therefore the Goodyear company has sought to appoint dealers in desirable locations who would agree to render helpful service to users.

Claiming to have based all its policies on thorough investigation, careful analysis and expert legal advice, the company is certain that when the facts are known to the Federal Trade Commission the complaint will be dismissed.

### Maxwell Production Down

DETROIT, Aug. 25—The Maxwell Motor Co., which has gone into war work on a large scale jointly with the Chalmers, has cut its production of passenger cars sharply. For the 6 months ended June 30 its output was about 50 per cent of the total of a year ago, or 22,000 cars, as against 43,500. Its truck production decreased from 12,000 to 4000.

## Gasoline Production Still on the Increase

June Output at Rate of 10,500,781 Gal. per Day—Stocks Decline Slightly

Production		
	June, 1918	May, 1918
Crude oil (bbl.).....	28,140,479	28,510,698
Gasoline (gal.).....	315,023,445	319,391,160
Stocks on Hand		
	June 30, 1918	May 31, 1918
Crude oil (bbl.).....	11,956,151	11,824,633
Oils purchased to be re-run (bbl.).....	932,561	872,300
Gasoline (gal.).....	418,440,353	460,637,479
Kerosene (gal.).....	426,285,676	343,311,945
Gas and fuel (gal.).....	550,704,759	515,020,224
Lube (gal.).....	158,316,257	161,009,729
Wax (lb.).....	169,424,428	168,171,328
Coke (ton).....	17,478	15,583
Asphalt (ton).....	97,631	104,214
Miscellaneous (gal.).....	273,877,024	317,115,697

WASHINGTON, Aug. 23—During June, 1918, the average daily production of gasoline was 10,500,781 gal., an amount slightly in excess of the daily production average for May, although the total production for the latter month, as shown in the table, was slightly greater than that of June. This apparent anomaly is accounted for by the fact that there are 31 days in May as compared with 30 in June.

According to the figures just issued by the Bureau of Mines the stock of gasoline on hand on June 30 was 418,440,353 gal., as against a stock of 460,637,479 gal. at the end of May. The total of April 30 was still larger, being 509,197,134 gal. Taking the season and the additional demand into consideration, these stock figures are perfectly normal.

Production of crude oil has dropped slightly, the June figures being 28,140,479, as against 28,510,698 gal. during May. The item "Oils Purchased and Re-run" given above is not a figure which can be properly added to actual crude production figures, as it is understood to represent crude or distillate which has at some previous date been included in the regular crude production figures. Nevertheless, these additional 3,483,270 gal. are available.

### \$20,000,000 Tractor Corporation Being Formed

PHILADELPHIA, Aug. 24—A \$20,000,000 corporation for the purpose of financing the manufacture of tractors right down the line from maker to consumer is in process of formation in this city, according to Franklin Spiess, an investigator of the proposition. Five Philadelphia bankers, whose names are withheld until the plans are further advanced, are to put \$2,000,000 apiece into the corporation at its inception, it is said, and it is possible that these men may influence other capital, or there may be a certain amount of stock-selling.

Behind the tractor proposition is the intention of financing to a limited extent

the tenant farmer, whose tractor paper no bank, Federal Reserve or otherwise, will honor under present conditions. By affording him a chance to buy his tractor on time, instead of the usual "sight draft with bill of lading attached," ground that otherwise might lie idle because of the attitude of the banks, it is said, could be placed under immediate cultivation.

### Traverse City Becomes Napoleon

TRAVERSE CITY, MICH., Aug. 26—The capital of the Traverse City Motor Car Co. has been increased from \$150,000 to \$500,000 and the name of the company changed to Napoleon Motors Co. Following are the new officers just elected: President, W. J. Chase; vice-president, C. E. Culver; secretary-treasurer, Frank Trude; chief engineer and general manager, K. W. Oswald; directors, the officers and J. W. Patchin, George H. Curtis and C. S. May. The company has been turning out 1 and 1½-ton trucks and three models of passenger cars.

### Wheel Makers' Association

TOLEDO, OHIO, Aug. 26—The Association of Automotive Wheel Manufacturers was formed here last week when twelve concerns, representing practically all makers of wire, pressed steel and cast steels, met for the purpose of closer co-operation. Some of those present represented the wood wheel makers. The object of the association is the investigation and promotion of engineering and mechanical problems of automotive wheel manufacturers.

### Milwaukee Wants Training School

MILWAUKEE, Aug. 26—Milwaukee, with thirteen large factories devoted to the manufacture of motors for passenger and commercial cars, trucks, tractors and aircraft, is making an effort to induce the War Department to locate a training school for automotive mechanics selected under the draft in this city. The Milwaukee County Council of Defense has been assured by each of the plants that it will assist in conducting and maintaining a school of this kind. It is pointed out that few cities in the United States have equal facilities for training soldiers in the construction, maintenance and repair of gas engines.

### Cincinnati Dealers Organize

CINCINNATI, Aug. 24—The Cincinnati Automobile Trades Association has been organized in this city with H. H. Brenner as president, R. R. Curl as secretary, S. A. Wright as vice-president and R. R. Woolley as treasurer. The organization includes practically everybody interested in the automobile trade. There were 130 members to start, which will be increased to over 300 by Sept. 1. The purpose of the organization is to procure united co-operation for the war purposes of the Government, cut off extra hours, provide an emergency service.

### Cars and Trucks in United States July 1, 1918

#### ALL DUPLICATE REGISTRATIONS DEDUCTED

New York.....	422,853
Ohio .....	415,962
Illinois .....	362,742
Iowa .....	325,000
Pennsylvania .....	324,184
California .....	291,667
Michigan .....	236,981
Indiana .....	207,381
Texas .....	198,369
Minnesota .....	188,709
Kansas .....	185,000
Wisconsin .....	182,700
Missouri .....	164,790
Nebraska .....	159,500
Massachusetts .....	156,798
New Jersey .....	124,519
Washington .....	100,722
Oklahoma .....	91,700
Georgia .....	89,441
Connecticut .....	75,900
South Dakota .....	71,800
Colorado .....	71,600
North Dakota .....	68,824
Virginia .....	65,000
North Carolina .....	61,946
Maryland .....	61,012
Kentucky .....	57,543
Oregon .....	57,006
Tennessee .....	51,900
South Carolina .....	47,950
Montana .....	46,865
Alabama .....	44,859
Florida .....	42,816
Arkansas .....	39,000
Maine .....	38,439
Louisiana .....	37,600
Mississippi .....	37,500
Dist. of Columbia .....	36,969
West Virginia .....	34,371
Idaho .....	27,810
Rhode Island .....	26,399
Utah .....	23,850
New Hampshire .....	21,230
Arizona .....	21,180
Vermont .....	19,765
New Mexico .....	15,745
Wyoming .....	14,150
Delaware .....	11,129
Nevada .....	7,625

Total.....5,466,931

## 5,466,931 Automobiles in Use July 1, 1918

### Registrations Gain 525,665 Since January 1—Now a Vehicle For Every 22 Persons

IT is significant that the gain of 525,665 in motor vehicle registrations between Jan. 1 and July 1 of this year has not been made up in the areas of large population, but rather through the grain belt of the Mississippi Valley and the Southern States.

A study of the registration figures for the first 6 months of this year affords a real insight into the use and distribution of motor vehicles, and also gives a definite basis for studying trends under war conditions.

The total motor vehicle registration as of July 1, 1918, was 5,466,931 net, that is, not including duplicate registrations, as against a total net registration of 4,941,276 on Jan. 1. These totals include passenger cars, trucks, motor buses and trailers (where the latter are registered), and although it is impossible to indicate the actual individual numbers of automobiles and trucks owing to the fact that some of the states do not segregate these when registered, a careful estimate shows that there are nearly 500,000 trucks in use at the present time.

For the first time a reduction in registrations is shown in several states when the July 1 totals are compared with those of Jan. 1, a circumstance which may indicate that there are in such states a number of cars which have not been registered and are obviously not in service, although possibly in storage. Included in the six states which show an actual loss are Massachusetts and New Jersey, both having large centers of population and being manufacturing rather than agricultural states. Maine

(Continued on page 44)

### Registration and Population

State	Pop. July 1, 1917 Census	Cars and Trucks	Pop. Per Car
Iowa .....	2,224,771	325,000	6
Nebraska .....	1,284,126	159,500	8
Dist. of Colum. ....	369,282	35,969	9
South Dakota .....	716,972	71,800	9
California .....	3,029,032	291,667	10
Kansas .....	1,851,870	185,000	10
Montana .....	472,935	46,865	10
North Dakota .....	765,319	68,824	11
Arizona .....	253,738	21,180	12
Minnesota .....	2,312,445	188,709	12
Ohio .....	5,212,085	415,962	12
Colorado .....	988,320	71,600	13
Indiana .....	2,835,492	207,381	13
Michigan .....	3,094,266	236,981	13
Wisconsin .....	2,527,167	182,700	13
Wyoming .....	184,970	14,150	13
Nevada .....	110,738	7,625	15
Oregon .....	861,992	57,066	15
Washington .....	1,597,400	100,722	15
Connecticut .....	1,265,373	75,900	16
Idaho .....	445,176	27,810	16
Illinois .....	6,234,995	362,742	17
Utah .....	443,866	238,850	18
Vermont .....	364,946	19,765	18
Delaware .....	215,160	11,129	19
Maine .....	777,340	38,439	19
New Hampshire .....	444,429	21,230	20
Florida .....	916,185	42,846	21
Missouri .....	3,429,505	164,790	21
Maryland .....	1,373,673	61,012	22
Texas .....	4,515,423	198,369	22
Rhode Island .....	625,865	26,399	23
Massachusetts .....	3,775,973	156,798	24
New York .....	10,460,182	422,853	24
New Jersey .....	3,014,194	124,519	24
Oklahoma .....	2,289,855	91,700	24
New Mexico .....	423,649	15,745	26
Pennsylvania .....	8,660,042	324,184	26
Georgia .....	2,895,841	89,441	32
South Carolina .....	1,643,205	47,950	34
Virginia .....	2,213,025	65,000	34
North Carolina .....	2,434,381	61,946	39
Kentucky .....	2,394,093	57,543	41
West Virginia .....	1,412,602	34,371	41
Tennessee .....	2,304,629	51,900	44
Arkansas .....	1,766,343	39,000	46
Louisiana .....	1,856,954	37,600	49
Alabama .....	2,363,939	44,859	52
Mississippi .....	1,976,570	37,500	52
Total .....	103,640,473	5,466,931	..
Average for U. S. ....	..	..	22

### Dealers, Garages, Machine Shops and Supply Houses in Operation

State	Dealers	Garages	Repair-shops	Jobbers	Supplies Exclu- sively	Cos. Hav- ing Supply Depts.	Totals	State	Dealers	Garages	Repair-shops	Jobbers	Supplies Exclu- sively	Cos. Hav- ing Supply Depts.	Totals
Alabama .....	191	119	83	3	26	51	473	New Jersey .....	699	946	446	1	88	256	2,436
Arizona .....	131	107	64	1	12	47	361	New Mexico .....	95	95	36	..	7	47	280
Arkansas .....	208	120	74	..	12	50	473	New York .....	2,023	2,435	1,175	14	334	678	6,659
California .....	1,309	1,413	967	17	170	450	4,326	North Carolina .....	317	257	112	1	25	104	816
Colorado .....	351	329	180	2	24	141	1,027	North Dakota .....	477	324	177	1	10	141	1,093
Connecticut .....	486	478	291	7	85	156	1,503	Ohio .....	1,736	1,322	648	26	143	509	4,384
Delaware .....	70	71	27	..	6	21	195	Oklahoma .....	464	344	143	2	29	149	1,131
Dist. of Col. ....	51	53	32	2	18	10	166	Oregon .....	237	233	112	2	27	75	686
Florida .....	293	267	159	2	36	117	874	Pennsylvania .....	1,803	1,817	824	18	216	681	3,839
Georgia .....	321	297	170	2	61	105	956	Rhode Island .....	95	137	87	5	..	18	342
Idaho .....	174	124	70	1	15	66	450	South Carolina .....	225	130	68	2	19	57	501
Illinois .....	2,066	1,970	1,093	17	133	622	5,901	South Dakota .....	449	340	151	2	11	109	1,062
Indiana .....	1,013	822	369	10	66	308	2,588	Tennessee .....	237	153	114	3	28	76	611
Iowa .....	1,645	1,383	768	8	67	699	4,572	Texas .....	820	653	284	12	90	217	2,076
Kansas .....	957	873	440	8	33	357	2,668	Utah .....	107	71	49	3	13	26	269
Kentucky .....	306	245	99	3	25	78	756	Vermont .....	180	161	96	..	9	75	521
Louisiana .....	165	90	52	4	20	36	367	Virginia .....	303	203	120	2	47	76	751
Maine .....	361	292	124	3	18	128	926	Washington .....	417	332	182	6	51	100	1,088
Maryland .....	235	214	111	2	29	73	694	West Virginia .....	261	158	69	..	17	72	577
Massachusetts .....	838	943	419	17	142	239	2,598	Wisconsin .....	1,029	900	406	10	47	327	2,719
Michigan .....	957	835	349	8	96	297	2,542	Wyoming .....	80	67	38	..	9	23	217
Minnesota .....	1,113	813	449	15	41	279	2,740	Ter. of Hawaii .....	11	8	10	..	5	9	43
Mississippi .....	157	98	37	..	15	44	351	West Indies .....	28	24	3	..	4	9	68
Missouri .....	825	670	382	16	62	216	2,111	Canada .....	970	853	357	21	55	211	2,487
Montana .....	263	224	127	2	15	93	724	Mexico .....	8	10	3	..	2	2	25
Nebraska .....	356	270	11	21	231	1,569	..	Total .....	28,619	25,836	13,040	292	2,589	9,106	79,482
Nevada .....	53	56	25	..	4	18	156								
New Hampshire .....	194	217	103	..	10	98	622								

The total of 79,482 shown in this table does not represent the actual number of dealer and other establishments listed under the various heads. It is obvious that there must be a certain amount of overlapping, due to the fact that many dealers are also garagemen, repairmen, etc. It is estimated that the individual firms and corporations do not exceed 45,000.

## Prominent Tradesmen Assume New Duties

### Resignations and Promotions Place Workers in New Places

Glenn A. Sanford has been appointed sales manager of the rim division of the Jaxon Steel Products Co., Jackson, Mich.

Bert B. Fornaciari, formerly secretary and general manager of the Harvey Motor Truck Co., Harvey Ill., for nine years, has recently been appointed Production Manager and Chief Engineer of the Midland Motor Car & Truck Co., Oklahoma City. W. B. Burgess, formerly in charge of the Cost, Time and Stores Departments of the Harvey company for two and one-half years, and assistant to Fornaciari at Harvey, has also joined the Midland forces as Assistant Production Manager. O. H. Brauer, formerly connected with the Engineering Department of the Buda Co., Harvey, Ill., is associated with the Midland as assistant engineer.

R. M. Taylor, for the past 17 years with the Banner Buggy Co. and the Chevrolet Motor Co., St. Louis, has recently taken over the duties of purchasing agent for the Traffic Motor Truck Corp., St. Louis.

L. S. Nold, formerly of the Electric Vehicle Co., also the General Electric Co., on Aug. 23 became identified with the Mitchell Motors Co. as secretary and treasurer. W. H. Armstrong, for eight years the former secretary and treasurer of the Mitchell company, resigned to devote his time to other interests in Racine.

R. T. Hodgkins has been appointed general sales manager of the Cleveland Tractor Co., Cleveland. For the past four years he was general sales manager of the Studebaker Corp., and previous to that was connected with the Yale & Towne Mfg. Co., New York.

J. J. Wright, for two years manager of the Ford Branch at Memphis, has been promoted to manager of the St. Louis Branch, where new offices will be opened, the assembly plant there having been turned over to the United States. Wright succeeds W. C. Anderson, made manager of the Assembly plant at Chicago. C. S. Williams of the Louisville Branch becomes manager at Memphis. W. R. Johnson will continue as assistant manager in St. Louis.

W. V. Logan, formerly in the Goodyear Tire & Rubber Co. service in St. Louis and later a traveler for that firm in Europe, is in St. Louis awaiting call to service in the Naval Aviation branch. He will be trained at the Great Lakes Station.

P. C. Christman has retired from the Gill Piston Ring Co. as treasurer and general manager, and has been succeeded by L. H. Phelps. Phelps assumes full charge of Christman's duties in this company, the Bearings Co. of Pennsylvania, and the Chalmers Sales Corp., to take effect immediately. Christman goes into Government service.

### Highways Transport Committee Work

WASHINGTON, Aug. 26—The work of the Highways Transport Committee, Council of National Defense, which was appointed to make the most effective use possible of the highways as one of the means of strengthening the nation's transportation resources, is now being developed in such a way as to take in every state in the Union. Further,

through the medium of State Highways Transport bodies, functioning with the national body, this organization is being developed in some states not only down to the districts, but to the counties and even communities.

The State Highways Transport bodies are a part of the State Council of Defense. They consist of the following:

The chairman of the State Highways Transport Committee, five members of the Highways Transport body and a secretary.

The five members in question are named to represent areas of varying sizes and populations, each of the five members being chosen from one of such five different areas, and in turn serving as chairman of his district committee. The district boundaries are laid out in harmony with existing conditions, the aim being that the most effective results possible may be brought about. For instance, in one locality large population centers may be found to be best as the heart of one or more districts. Again, in other sections, where cities of large population are not found the district boundaries may be made to embrace agriculture, lumber, oil or other areas.

### Stabilize Gasoline Prices

WASHINGTON, Aug. 20—Prices of gasoline and other oil products will be stabilized and steady production of petroleum will be assured by a plan now being worked out by the National Petroleum War Service Committee in co-operation with the United States Fuel Administration. Maximum premiums will be arranged for payments for various qualities of oil. Heretofore competition has caused refiners to bid against each other and pay excessive premiums over the base rate for oil. This has resulted in exorbitant consumer's prices, and has also created disturbance in the oil industry, frequently hampering oil production. By means of the maximum premiums it is expected that permanent prices for crude petroleum will prevail, and that its proper production and distribution will be assured. Protection will thus be given to both small and large refineries.

## Tractors Plentiful In Western Garages

### Quincy Dealers and Distributors Nearly All Have Them—Many Demonstrations Held

QUINCY, ILL., Aug. 25—Tractors and trucks have taken the prominent positions in most of the garages in this city this summer. Practically every passenger car distributor has one or more lines of trucks and tractors on his floors, and everyone is making a determined drive to get the farmers and merchants interested in his line.

Tractor demonstrations are every-day affairs now. The latest one to be staged was held by the Quincy Overland Co. with the Plowman tractor across the river in the Missouri bottoms, where the soil is deep and sticky and the tractor has to work right to get through. The demonstration was in charge of Manager D. Y. Yantis, assisted by Service Manager Hutchins and Tractor Sales Manager Gamble, and hundreds of interested farmers from the surrounding territory were on hand for the show.

Several different makes of tractors were demonstrated. As a result of the work done by the tractors, Sales Manager Gamble tucked away several orders for early delivery of machines. The Irwin Motors Co. has taken an agency for the Heider tractor, the Johnston Plank Co. for the Boring tractor, the Springfield Garage for the Moline and the Clough Reihm Co. has taken on the Case. "Sell tractors and trucks" is now the sales slogan in this territory, and everybody is doing it.

### Motorcycles Are Essential

WASHINGTON, Aug. 25—Motorcycles and bicycles have been recognized as essential by the Priorities Division of the War Industries Board, following a meeting between the representatives of these industries with the board.

### Automotive Securities Quotations

	Bid	Asked		Bid	Asked
Ajax Rubber Co.	62	64	Maxwell Motor Co., Inc., 1st pfd.	56½	57
J. I. Case T. M. Co., pfd.	80	83½	Maxwell Motor Co., Inc., 2nd pfd.	20½	20½
Chalmers Motor Co., com.	4½	5½	Miller Rubber Co., com.	105	108
Chalmers Motor Co., pfd.	20	30	Miller Rubber Co., pfd.	95	97
Chandler Motor Car Co.	87½	89	Packard Motor Car Co., com.	110	120
Chevrolet Motor Co.	139	141	Packard Motor Car Co., pfd.	94	97
Fisher Body Corp., com.	36	36½	Paige-Detroit Motor Car Co.	17	19
Fisher Body Corp., pfd.	89½	91	Peerless Truck & Motor Corp.	15	17
Fisk Rubber Co., com.	60	61	Portage Rubber Co.	106	108
Fisk Rubber Co., 1st pfd.	98	103	Reo Motor Car Co.	14½	15½
Fisk Rubber Co., 2nd pfd.	78	83	Saxon Motor Car Corp.	6½	7½
Firestone Tire & R. Co., com.	104	108	Springfield Body Corp., com.	..	..
Firestone Tire & R. Co., pfd.	94	96	Springfield Body Corp., pfd.	..	..
General Motors Co., com.	162	164	Standard Motor Construction Co.	12½	13
General Motors Co., pfd.	81½	81½	Standard Parts Co.	60½	..
B. F. Goodrich Co., com.	44	45	*Stewart-Warner Speed, Corp.	56½	57½
B. F. Goodrich Co., pfd.	98½	100½	*Studebaker Corp., com.	43½	44½
Goodyear Tire & R. Co., com.	150	155	*Studebaker Corp., pfd.	81½	90
Goodyear Tire & R. Co., pfd.	97½	98½	Swinehart Tire & Rubber Co.	45	55
Grant Motor Car Corp.	2½	3	United Motors Corp.	32½	33½
Hupp Motor Car Corp., com.	2½	3½	*U. S. Rubber Co., com.	62½	63
Hupp Motor Car Corp., pfd.	78	80	*U. S. Rubber Co., pfd.	104½	105½
International Motor Co., com.	27	32	*White Motor Co.	45½	46½
International Motor Co., 1st pfd.	50	55	*Willys-Overland Co., com.	19½	19½
International Motor Co., 2nd pfd.	36	40	*Willys-Overland Co., pfd.	81½	83½
Kelly-Springfield T. Co., com.	48	49			
Kelly-Springfield T. Co., pfd.	80	87			
Lee Rubber & Tire Corp.	19½	20			
Maxwell Motor Co., Inc., com.	26	27			

\*At close Aug. 24. Listed N. Y. Stock Exchange. †Par value \$10.



## Get Behind the Rural Motor Express

(Continued from page 28)

termed in the Aug. 7 issue of the Motor World, The Rural Motor Express.

"The educational material you have prepared will aid us wonderfully, therefore we are asking that you forward us about ten copies of each of your literature."

J. B. Hardison of the Hardison & Arthur Co., Lewisburg, Tenn., writes: "We are glad to offer our co-operation in any way to the establishment of Rural Motor Express lines. We will thank you to send us 100 pamphlets on organization of Rural Motor Express Lines as per the enclosures. We will take this matter up with 100 good farmers and merchants in our district and see what can be done to establish Rural Motor Express lines. Also we are carrying this information in our local papers and hope to be able to succeed in establishing three express lines."

Chas. A. Spenny, 831 M. & M. Bank Bldg., Milwaukee, writes: "Please send me pamphlets, also any other printed matter you may have. I am thinking of organizing a Motor Express with probably 50 trucks."

W. Dudley Pratt, Jr., of the Indianapolis Chamber of Commerce writes: "We are sending you herewith a list of truck drivers who haul live stock to Indianapolis several times a week, together with their addresses."

"So far as we know there are no Rural Motor Express lines actually in operation under the system which has been advocated by the National Council of Defense. The truck men, whose names we are sending you, are either farmers owning their own trucks or ex-dray men who have purchased one or two trucks and who make it their business to haul live stock and other agricultural commodities into Indianapolis. Neither of these classes know very much about the Rural Motor Express nor are they very much interested in taking loads back home with them after they have unloaded their stock in Indianapolis."

"It is very regrettable that such should be the case, and it is our opinion that a great deal of educational work will have to be done before this class of truck drivers is properly lined up." The following letter was also received: "We have just received your wire requesting information as to the number of trucks hauling material to our stock yards as well as the amount of tonnage hauled and photographs of trucks both loaded and unloaded."

"The number of trucks which haul live stock daily to the stock yards varies a great deal, depending largely upon the market price of hogs or cattle and also upon the weather."

"Some days very few trucks arrive at the stock yards—less than a hundred—while on other days there are over five hundred trucks arriving, coming at all hours of the day and night. Not so awfully long ago the stock yards company counted as many as 574 trucks

## Observe These Rules in Operating Your Car

*Suggested by Oakland Motor Co.*

1. Don't let engine run when car is standing. It is good for starter battery to be used frequently.
2. Don't spill or expose gasoline to air—it evaporates rapidly and is dangerous.
3. Don't use gasoline for cleaning and washing—use kerosene or other material for cutting grease.
4. Stop all gasoline leakages. Form habit of shutting off gas at tank or feed pipe.
5. Adjust brake bands so they do not drag. See that all bearings run freely.
6. Have carbureter adjusted at service stations of carbureter or automobile companies—they will make ordinary adjustments without charge.
7. Keep needle valve clean and adjust carbureter (while engine is hot) to use as lean mixture as possible. A rich mixture fouls the engine and is wasteful.
8. Pre-heat air entering carbureter and keep radiator covered in cold weather—this will insure better vaporization
9. See that the spark is timed correctly with engine and drive with spark as fully advanced as possible without causing engine to labor.
10. Have a hot spark, keep plugs clean and spark points properly adjusted.
11. Avoid high speed. The average car is most economical at 15 to 25 miles per hour.
12. Don't accelerate and stop quickly—it wastes gas and wears out tires. Stop engine and coast long hills.
13. Cut down aimless and needless use of cars. Do a number of errands in one trip.
14. Know your mileage per gallon. Fill your tank full and divide speedometer mileage by gallons consumed.

"It seems most apropos that the Oakland Motor Car Company should sponsor this campaign of gasoline conservation," said ———, local distributor, "since it builds a thrifty car that is famous for practising the economy that the Oakland dealers are preaching in every State of the Union."

"Thousands of Oakland owners report from 18 to 25 miles to the gallon of gasoline."

which unloaded both cattle and hogs in one day.

"If you figure that each one of these trucks averages between 1500 and 2000 lb. of stock you will arrive at the figure for total tonnage. The total tonnage hauled out on their return trips, however, is very small as most of the trucks turn right around and return to their homes empty after unloading their stock."

"Our own Return Loads Bureau is sending out perhaps only ten shipments per week. These will average less than a ton each."

From O. A. King of the Civic and Commerce Association at Eau Claire, Wis., the following was received: "Many thanks indeed for your letter of July 23 together with printed matter relative to Rural Motor Express Lines."

"I have looked this matter over with considerable interest, and it would appear that you are carrying on a most worthy work and one which, in my opinion, will assist considerably in transporting crops.

"To date, there has not been established in this community a Rural Motor Express Line. We are very much interested, however, in securing further information as to just how these lines are established. If you will be kind enough to send me full information, I can assure you that I shall be glad to bring the matter before the proper committee of this organization."

W. P. Ela, secretary of the chamber of Commerce of Grand Junction, Col., writes: "Will be pleased to receive your literature on establishment of truck lines. We have a few now in operation, and I presume more will be established as required. We fear at this time that our difficulty will be in getting our product out to market by way of railroads rather than getting it in to the railroad."

The following telegram was received from J. M. Caten, Greensboro, N. C.: "Will you please mail me cartoon poster copies of Rural Motor Express Lines and of organization of Rural Motor Express Lines as I am contemplating two lines out of Greensboro."

Specifications  
of the  
Leading Cars

# MOTOR WORLD GUIDE

Revisions Are  
Made in Table  
Every Week

Model	S. A. E.	Ignition	Carburetor	Starting	Clutch	Gearset	Wheelbase	Tires	Rims	2- Passenger	5- Passenger	7- Passenger	Coupe	Sedan	Limousine	Detachable Top
ABBOTT 6-2	6-31x5 29.4 Remy	Stumg	Remy	DD 3	122	34x4	SS			\$1875		\$1875		\$2375		
ALLEN Series 41	4-31x5 22.5 Conn	Stumg	A-Lite	D 3	112	32x4	SS			\$1145	\$1195			\$1395		
AMERICAN B	6-31x5 23.4 A. Kent	Zenith	West	DD 3	122	32x4	SS			1645	1595	1695				
ANDERSON 20	6-31x4 25.3 Conn	Zenith	Watts	DD 3	120	33x4	SS			**1465				2165		
400-F	6-31x5 29.4 Bosch	Stumg	Watts	DD 3	120	33x4	SS			**1925						
APPERSON 8-18	8-31x5 33.8 Remy	Johnson Bijur		DP 3	130	34x4	SS			12850		2800		4250	4500	
Anniversary												3650				
AUBURN 6-39-B	6-31x4 25.3 Remy	Radd	Remy	DP 3	120	34x4	SS			1445	1445					1695
6-44	6-31x5 29.4 Delco	Radd	Delco	DP 3	131	35x4	SS				1785	1785		2650		2085
AUSTIN Hy-King	12-31x5 39.6 Delco	Stumg	Delco	D 6	142	34x4	QD			3750	3750	4000		4550	5000	5250
BELL 18	4-31x4 22.5 A. Kent	Zenith	Dyneto	D 3	114	31x4	QD			1150	1150					
BIDDLE H	4-31x5 22.5 Eisman	Zenith	G & D	DP 4	121	32x4	QD			2700		12750		4100	4000	
BOUR-DAVIS 18B	6-31x5 29.4 West.	Stumg	West.	DP 3	118	33x4	QD				1785					
4-31x5 22.5 West.				DP 3	118	32x4					1680					
BREWSTER 4-25	25.6 Bosch	Zenith	U.S.L.	C 3	125	34x4	SS			7200	7700			8300	8400	8500
BRISCOE B-24	4-31x5 16.3 Conn	Buick	A-Lite	C 3	104	30x3	C			885	885					
BUICK EA-34-35	4-31x4 18.2 Delco	Marvel	Delco	C 3	106	31x4	C			795	795			1185	1845	
E4-45	6-31x4 27.3 Delco	Marvel	Delco	DP 3	118	34x4	SS			1265	1265			1166		1265
E-49	6-31x4 27.3 Delco	Marvel	Delco	DP 3	124	34x4	SS					1495		2175		
CADILLAC 37	8-31x5 31.2 Delco	Own	Delco	D 3	125	35x5	SS			3220	3220	3220			4395	
CASE U	6-31x5 29.4 Watts	Radd	Watts	D 3	125	35x4	SS			11875	1875	1875		**2375		
CHALMERS 6-30	6-31x4 25.3 Remy	Stumg	Watts	DP 3	117	32x4	SS			1565	1565	1615		1975	2250	2925
CHANDLER 490	6-31x5 29.4 Bosch	Radd	Watts	DP 3	123	34x4	SS			11795	11875	1795		2395	2495	3095
CHEVROLET 400	4-31x4 21.7 Remy	Zenith	A-Lite	C 3	102	30x3	C			715	735			1150	1185	
FA D	4-31x5 21.7 Remy	Zenith	A-Lite	C 3	108	33x4	SS			995	995			1475		
COLE 870	8-31x4 36.4 Remy	Zenith	A-Lite	C 3	120	34x4	SS			11550	1585					
COLUMBIA C&D	6-31x4 39.2 Delco	Stumg	Delco	C 3	127	33x5	SS			2595	12595	2595		3795	3595	
COMET C-50	6-31x4 25.3 A. Kent	Stumg	W. Lord	DP 3	115	32x4				11595	1550			2395		
COMMONWEALTH 4-40	4-31x5 19.6 A. Kent	Carter	Dyneto	D 3	125	33x4						1685				
CROW-ELKHART CE-36	4-31x5 19.6 Conn	Zenith	Dyneto	DD 3	115	32x3	SS			1995	1095					
CUNNINGHAM 8-31x5	45.0 Delco	Stumg	West	D 3	132	35x5					1455			1455		
DANIELS B	8-31x5 33.8 Watts	Zenith	Watts	D 3	127	34x4	QDR			3500	3500	3500				
DAVIS H. I.	6-31x4 25.3 Delco	Stumg	Delco	C 3	119	34x4					1685	1685		2200		
J. I. 6-30	6-31x5 29.4 Delco	Stumg	Delco	C 3	125	34x4					2050	2050				
DIXIE FLYER 1535	4-31x5 16.9 Conn	Carter	Dyneto	D 3	112	32x3	SS			1095	1095			1375		

Model	S. A. E.	Ignition	Carburetor	Starting	Clutch	Gearset	Wheelbase	Tires	Rims	2- Passenger	5- Passenger	7- Passenger	Coupe	Sedan	Limousine	Detachable Top
MAIBOEM A	4-31x4 15.6 A. Kent	Zenith	Disco	DD 3	105	30x3	C			\$ 830		\$1095				\$ 865
B	6-31x4 23.4 A. Kent	Stumg	Wagner P	3	115	32x3	SS			1260	\$1260					
MARMON 34	6-31x5 33.7 Bosch	Stumg	Bijur	C 3	136	32x4	QD			13750	3700	3750		5180	5250	
MAXWELL 25	4-31x4 21.0 A. Kent	Johnson Shams	C 3	109	30x3	C				1325	825			1275	1275	935
McFARLAN	6-41x6 48.6 Mag'co	Stumg	Watts	DP 3	136	35x5	QD			3900	3900	3900		5000	5080	
MERCER Series 4	4-31x6 22.5 Bosch	Zenith	U.S.L.	DD 4	132	34x4	QD			14000	4000					
MITCHELL D-40	6-31x5 25.3 Remy	Radd	Remy	C 3	120	32x4	SS			1350	1350			1900	2000	300x
C-42	6-31x5 29.4 Remy	Stumg	Remy	C 3	127	34x4	SS			11565	1625	1625		2210	2375	2850
MOULINE-KNIGHT C	4-31x5 22.5 Conn	Schebler A-Lite	C 3	118	34x4	SS				12000	2000			2500		
G	4-4x6 25.6 Conn	Schebler A-Lite	C 3	122	35x4	SS				12500		2500				
MONITOR C-R	4-31x4 22.5 Conn	Schebler Dyneto	D 3	32x3	SS					995	995					
J	6-31x4 25.3 Conn	Stumg	Dyneto	D 3	33x4	SS				1295	1295					
MONROE M-3	4-31x4 16.9 Conn	Zenith	A-Lite	DD 3	96	31x3	QD			565	1335			965		
M-6	4-31x4 16.9 Conn	Zenith	A-Lite	DD 3	115	32x3	QD				995			1850		
MOON 6-36	6-31x4 19.8 Delco	Titan	Warner	DP 3	114	32x3	SS			1395				2650		
6-66	6-31x5 29.4 Delco	Radd	Delco	DD 3	125	35x4	SS			12250						
MOORE 30	4-31x4 22.5 Conn	Schebler Dyneto	D 3	106	30x3					995						
MURRAY	8-31x5 33.8 Dixie	Zenith	Watts	DP 3	128	34x4				2800	2800	2800		3600		4000
NASH 682	6-31x5 25.3 Delco	Marvel	Delco	P 3	127	34x4	SS			11395	1395	1545		2085		
681-683																
684-685																
NATIONAL Six	6-31x5 29.4 Delco	Radd	Watts	C 3	128	34x4	QDR			12450	12450	2450		2915	3120	
Twelve	12-31x4 39.6 Delco	Radd	Bijur	C 3	128	34x4	QDR			13150	13050	3050		3515	3720	
NELSON	4-31x4 15.6 Bosch	Zenith	U.S.L.	D 3	104	32x4	SS			1200	11400					
OAKLAND 34-B	6-21x4 19.0 Remy	Marvel	Remy	C 3	112	32x4	SS			1185	1185			1760	1685	
OLDSMOBILE 45-A	8-21x4 26.4 Delco	B & Ball	Delco	C 3	120	34x4	SS			1700						
37	6-21x4 18.9 Remy	Johnson Remy	C 3	112	32x4	SS				11395	1395					
OLYMPIAN	4-31x4 16.9 Conn	Stumg	A-Lite	D 3	112	32x3				11240	1240			1340	1565	
OVERLAND 85B4	4-31x4 17.2 Conn	Titan	A-Lite	C 3	112	32x4	SS			11025	1025			1285	1485	
90	4-31x5 28.2 Conn	Titan	A-Lite	C 3	104	31x4	C			895	995			1925	1885	
OWEN-MAGNETIC M-25	6-31x4 25.3	Titan	A-Lite	C 3	116	32x4				1300	1300			1550	1720	
O-36	6-31x5 29.4 Bosch	Zenith	O-M	OM 6	125	34x4	SS			3300				3850		4350
W-42	6-4x5 33.4 Bosch	Zenith	O-M	OM 6	136	35x5	SS			13950	13950	3350		5000		5000
PACKARD 3-25	12-3x5 43.2 Delco	Own	Bijur	DD 3	136	35x5	QD					4600		6200		
3-25												4300		5550		
PAIGE 6-30	6-31x5 23.4 Remy	Stumg	G & D	D 3	117	32x4	SS			1515	1515			2850		260x
6-55	6-31x5 30.4 Remy	Radd	Remy	D 3	127	35x4	SS					1885		2850		

[illegible]

†6-passenger. †4-passenger. †3-passenger. t-towncar.  
..Convertible.

ABBREVIATIONS—"A. Kent" Atwater Kent, "A-Lite" Auto-Lite, "B. & Ball" Ball & Ball, "Conn" Connecticut, "G & D" Gray & Davis, "Eisman" Eismann, "L.N." Leece-Neville, "N. E." North East, "Nwcmb" Newcomb, "O.M." Owen Magnetic, "Rafid" Rayfield, "Smibg" Stromberg, "Splidtr" Splitdorf, "Titan" Tillotson, "Waths" Westinghouse, "W. Lard" Ward Leonard, "D" Disk, "DD" Dry Disk, "P" Plate, "F" Friction, "G" Gearless, "CU" Control Unit, "Mag" Magnetic, "SS" Straight-side, "QD" Quick Detachable, "C" Clincher, "DC" Detachable Clincher, "QDR" Quick Detachable Reversible, "U" Universal, "R & M" Robbins & Myers. NOTE—37/55 1/2 r means that the rear tires are 37/55, the front are smaller. Detachable top, 300x, means \$300 extra.

## 5,466,931 Automobiles in Use

(Continued from page 39)

also shows a loss and the three remaining states with fewer registrations are Minnesota, Texas and Oklahoma. All six of these losing states showed substantial gains in the first 6 months of 1917, but that gain of 106,473 is now turned into a loss of 32,388.

Phenomenal gains have been made by the State of Ohio, which has almost ousted New York from its premier position. Ohio shows a gain of 83,159 since Jan. 1, total which gains in significance when compared with New York's gain of only 11,903 registrations in the same period. Ohio's total registrations as of July 1 were 415,962, as against New York's 422,853, and if the former state maintains her rate of gain she will be leading New York by next January unless the latter state improves appreciably in her rate of registration.

The utilitarian aspect of the automobile is well evidenced by the fact that practically all the fifteen states which lead in registration gains are agricultural. The list is headed by Ohio, California and Kansas, all three agricultural leaders, and following them comes a group of farming states such as Illinois, Missouri, Michigan, Nebraska, North Dakota, Oregon, South Dakota, Washington and Arkansas. The registration gains in these agricultural states are all the more conspicuous when contrasted with the greatly reduced gains in those states which may be classed as manufacturing and those which have large centers of population.

The Southern States show an average percentage of nearly 30, the gains which showed as early as January being well maintained. The actual leader of all in percentage of gains is the District of Columbia, which shows an increase in the 6 months of 74 per cent. This is not surprising as the population of Washington has increased approximately 100,000.

Further analysis of the figures for the several states discloses that the shortage of farm labor has compelled the continuance of the purchase of motor cars and trucks in order that the full productive capacity of the land may be assured and the least possible time lost in shipping. The figures also show that the law of supply and demand is working out admirably in manufacturing and population centers where car sales have fallen off uniformly. This tends to show that this part of our population has been supporting all forms of war subscription and indicates the natural falling off that must be expected due to the thousands upon thousands of our younger men who have gone to France.

## Formulating List of Preferred Industries

WASHINGTON, Aug. 26—The War Industries Board is formulating a new list of preferred industries, which will be twice as long as the present preferred list which contains 32 classes. The extension of the list is due to widely expanded war needs and pressing demands of civilian origin. This new list will be

used as a key to the relative importance of all of the country's industrial enterprises. Each industry is being surveyed as to national needs and when the list is once established it will be maintained by a system of priority which will determine the use of the materials, facilities, fuel, transportation, labor and capital needed for them.

The War Industries Board is working with the War Finance Board in the creation of the new list.

An important point in this new list lies in the fact that it will be used as an indication of what constitutes war work. The War Department's "work or fight" ruling will be made by men who are engaged in any of the classes of the essential industries listed. The new table may be expected within a week.

## U. S. Tire Co. Operates Fleet of Trucks

DETROIT, Aug. 26—The United States Tire Co. is operating a fleet of trucks on the Detroit-Indianapolis 325-mile route. There are three trucks in use and they start work with the movement of a department, including machinery equipment from Detroit to Indianapolis. Tires and inner tubes are hauled one way and fabric the other way. The round trip, including loading, etc., is made in 5½ days, although the one-way trip can be made in 17 hr.

## Fleet Operators Hurt

HARTFORD, CONN., Aug. 19—Changes in the plan of drygoods stores deliveries has hit special service contractors very hard. As an illustration of how the new scheme has worked out, one service contractor who provided a big store with a fleet of twenty or more delivery cars, mostly Fords, has had to lay aside one-half of the cars because there was no use for them. This contractor recently completed a large garage and does all his own repairing. There is plenty of work for heavier cars about the city, but these he does not possess.

## N. A. D. A. Gets 150 More Members

ST. LOUIS, Aug. 26—Membership applications received at the N. A. D. A. headquarters this week reflected somewhat the turmoil of the trade during the last week and the fact that President Vesper and Executive Secretary Peake were engaged in Washington in ironing out difficulties there instead of seeking memberships. About 150 applications were received. Twenty-three of these came from Hartford, Conn., which is now more than 100 per cent, as the association has but 22 members. A miscount was made in sending in the applications and the local association now has one membership all paid ready for the next dealer who joins the local.

## Coming Events

## Tractor Demonstrations

Gates Center, Monroe Co., N. Y.	J. L. Chase Farm, State Fair.....	Aug. 28
Concord, N. H.	Food Commissioner, D. C. Van Dann.	
Laconia, N. H.	County Farm Bureaus.....	Aug. 28
West Raleigh, N. C.	M. C. Wilson, Director, Agriculture Extension, Dunham, N. H.	
Campton, N. H.	County Farm Bureaus.....	Aug. 29
Cheshire, Conn.	M. C. Wilson, Director, Agriculture Extension, Dunham, N. H.	
Hartford, Conn.	Farmers' Convention, College Farm.....	Aug. 28-30
Medina, Orleans Co., N. Y.	Dr. R. Y. Winters in charge.	
Syracuse, N. Y.	Special tractor demonstration, Albamont Farms.....	Aug. 30
Madison, Wis.	H. G. Gulliver, Mgr.	
Canada	New Haven County Farm.....	Aug. 30
Riverhead, L. I.	Mr. Harvey, Mgr.	
Trenton, N. J.	State Fair, Will F. Landon, Sec.....	Sept. 2-6
	State Fair Food Commission. L. J. Steele .....	Sept. 5
	State Fair, J. Dan Ackerman, Secy.....	Sept. 9-14
	State Fair. O. E. Remy, State Fair Secretary.....	Sept. 9-15
	County Fair. Harry Lee, Secy.....	Sept. 17-18-19
	Trenton Fair. Harry B. Salter, Supt. ....	Sept. 17-20
		Sept. 30-Oct. 4

## Shows

Detroit, Mich.	Automobile exhibits.....	Aug. 30-Sept. 8
Indianapolis, Ind.	State Fair.	
	Automotive Show, Indiana State.....	Sept. 2-7
	Fair, Indianapolis Automobile Trade Association; John Orman, Manager.	
Greely, Weld Co., Col.	Tractor show.....	Sept. 8-20
Chicago, Ill.	Central Community Fair.	
	Automotive and Accessories.....	Sept. 14-21
Dallas, Tex.	War Exposition, Municipal Pier. H. V. Buelow, Managing Director.	
	Seventh Annual Automobile Show.....	Oct. 14-17
Dallas, Tex.	Texas State Fair.	
	Seventh Annual Texas Automobile Show.....	Oct. 14-27
	Texas State Fair.	

## Conventions

Cincinnati, O.	District Convention, Ohio.....	Sept. 11
	Automobile Trade Association.	
Chicago, Ill.	Convention and Automotive Equipment Exhibit.....	Oct. 28-Nov. 2
	National Association of Automobile Accessory Jobbers.	



# MOTOR WORLD

for  
DEALERS, JOBBERS AND GARAGEMEN

Volume LVI  
No. 10

PUBLISHED WEEKLY  
NEW YORK, SEPTEMBER 4, 1918

Ten cents a copy  
Two dollars a year

## BIG INCREASE IN PORCELAIN EFFICIENCY

*Half Again as Much Resistance to Current When Heated*

In the high-speed, high-compression motors of today spark plugs must work in heat undreamed of a short time ago.

Yet under intense heat the porcelain insulator that once worked perfectly actually becomes a conductor of the electric current—fails to supply the explosive spark.

But science has now more than kept pace.

Experiment 3450 in the tenth year of unremitting original research work in our porcelain laboratories has produced a

porcelain with half again as much resistance to current when heated.

Champion Dependability takes so long a step forward that it seems well nigh inconceivable that any future motor will ever again develop heat enough to threaten short-circuiting through the porcelain insulator.

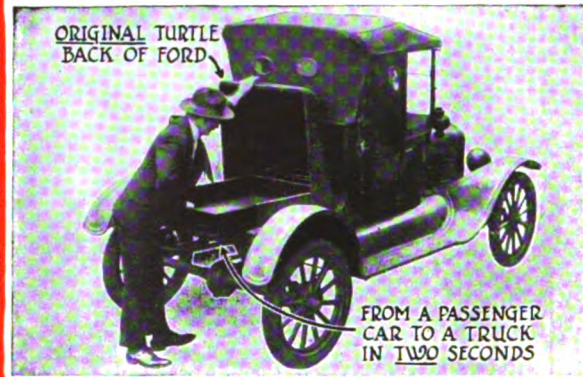
Dealers have always found it to their advantage to sell Champion Spark Plugs. Now more than ever their greater dependability means increased business. Sell them.

CHAMPION SPARK PLUG COMPANY, Toledo, Ohio



# A Big Factor of Economy and Conservation During War

**FOR  
FORDS**



**FOR  
FORDS**

## UTILITY DISAPPEARING TRUCK

*From a Ford Roadster to a Half-Ton Truck in 2 Seconds*

In war times economy and conservation are vitally necessary. The Utility Disappearing Truck offers a widespread means of effecting this. It converts a Ford roadster into a half-ton truck and does not interfere with its use as a passenger car. Every Ford roadster can now serve a two-fold purpose—hence the great economy possibilities of the Utility Disappearing Truck.

Once the Utility Disappearing Truck is installed a Ford roadster can be converted into a half-ton truck in two seconds. (This was proved by actual experiment.)

Price Only **\$38<sup>50</sup>** Complete

**Hauls Any Load Up to One-Half Ton**

No matter what the nature of the load to be carried, if it does not exceed a half ton it can be carried quicker and cheaper with the UTILITY DISAPPEARING TRUCK. No extra attachments or parts—just lift the turtle back, slide out the UTILITY DISAPPEARING TRUCK and have a half-ton truck in 2 SECONDS.

The truck is completely out of sight under the ORIGINAL turtle back of the Ford. When not in use the Utility Disappearing Truck cannot be seen by the most careful examination. Can be completely installed by anyone with a hammer and wrench in one hour. Only four bolts used in attaching it. No rattle, no vibration—a firm, secure truck body made of heavy gauge steel.

### UTILITY SURE-GRIP PEDALS FOR FORDS

Absolutely prevent foot slipping from clutch or brake pedal. Utility Sure-Grip pedals transform the small, smooth Ford pedals into standard size, safe, comfortable pedals.

Attached instantly—no holes to drill, no special tools required—one nut to tighten and the job is done. Once they are installed they absolutely cannot slip off.

DEALERS—Order a sample pair.



\$1.25 per pair.

The turtle back cannot be injured or marred when Ford is being used as a truck. It lifts up automatically and protects back of seat from scratches. Even when the UTILITY DISAPPEARING TRUCK is in use the Ford does not lose any of its original appearance. It is still a trim, neat little runabout.

**DEALERS!** Here's an opportunity to get in on one of the biggest selling propositions on the market. It's a real proposition.

Order a sample from your jobber

**THE HILL PUMP VALVE COMPANY**  
Archer Avenue and Canal Street CHICAGO, U. S. A.  
THE ZINKE CO., 1323 S. Michigan Ave., Chicago  
Factory Sales Representatives



# MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

PUBLISHED EVERY WEDNESDAY BY

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 W. I. Ralph, Vice-President E. M. Corey, Treasurer  
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## CORBIN-BROWN SPEEDOMETERS

"My Mileage Record is Correct to the Dot!"



THE motorist who says that derives great satisfaction from his reliable insight into the all-around service value of his car. His mileage figures tell him an interesting and valuable story—and he can depend absolutely upon their accuracy when he is using the

## CORBIN-BROWN SPEEDOMETER

Operating upon the centrifugal principle, the Corbin-Brown is not affected by extreme temperatures or electrical influence. It can't go wrong. It is simple, strong, made of high quality materials.

Get speedometer accuracy, plus durability by equipping the Corbin-Brown. Types for automobiles, motor trucks and motorcycles and special models for Ford cars.

Also specify the Corbin-Brown Maximum Speed Hand for convenience and safety. Registers your highest speed and stays at that point until you trip it back to zero. Does away with annoyance and risk of watching speedometer while driving at a fast pace.

Write for Catalog.

## CORBIN SCREW CORPORATION

American Hardware Corporation, Successor

NEW BRITAIN, CONN.

Branches: New York Chicago Philadelphia

**Be patient! Wait. Remember the first duty of us all is to help thrash the Kaiser. The war one day will be over and then golden prosperity will be yours.**

We realize how disappointing it is to send in your monthly order for Carlisle Cord Tires and not get the prompt delivery you desire.

We know how it cuts, how it digs into *your* bank account.

But *we know that you feel as we do*: Better suffer, better sacrifice, better lose all than let Germany win.

The *slightest wish* of the Government is *our command*.

We are *all* soldiers in this war on Autocracy. And a good soldier always obeys.

It is *the desire* of the Carlisle Cord Tire Co. to be the *best soldier*

in our particular industry.

The request has come that we cut our production—cut it to a point *where we will suffer*. This we have done *unquestioningly*. So remember when you feel the pinch of present conditions that your manufacturer, too, is suffering perhaps a *far greater loss* than you.

*Whatever happens*, be cheerful, be patient, be a *good soldier*.

And look to a *golden tomorrow*. For no really live dealer can ally himself with *this wonderful tire* permanently and fail to *win heavily*.



CARLISLE CORD TIRE CO., 250 WEST 54TH ST., NEW YORK CITY. FACTORY, ANDOVER, MASS.

When writing advertisers please mention Motor World—it identifies you





## Where Are the Road Salesmen of Yesterday?

**M**ANY are with the colors—at training camps and in active service “over there.”

Others are making less frequent trips on account of advance in cost of railroad travel, hotel expenses, etc.

Dealers and garage owners have noted this withdrawal of road salesmen. And because of this condition the trade is finding a new interest in the merchandise messages that reach them every week via **MOTOR WORLD**.

We urge our subscribers—who comprise a big percentage of dealers, jobbers and garage owners in all parts of the country—to give increasing attention and thought to the carefully edited advertising announcements appearing in successive issues.

Manufacturers who use this paper are representative. Their purpose is to effectively reach and appeal to the greatest number of buyers of their products at frequent intervals and with minimum of expense.

**MOTOR WORLD** functions as a successful mart for cars, trucks, tractors, unit power and lighting systems and their accessories. It is accessible to the whole trade every week.

Study of the advertising section will prove educational. It will help in the conservation of man power. It will promote economy of time. It will help lower selling costs as between manufacturer, wholesaler and retailer.

Those who are studying ways and means for going upon a *war business basis* will find constantly increasing need for this paper—for its editorial and advertising sections.

# LAMINATED SHIMS



**Just Peel off the Layers to  
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# LAMINUM

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# MOTOR WORLD

for  
DEALERS, JOBBERS AND GARAGEMEN

Vol. LVI

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No. 10

## I'm Ready, Gentlemen





*The charts which are illustrated on the opposite page are used in the classroom as shown in this picture, which was taken when the class was in session*

## *Teaching the Farmer*

# How to Care for His Tractor

*How the I. H. C. Sales Force Was Turned Into a Corps of  
Instructors That Helped Solve the Service Problem*

**T**HE 579 tractor schools held last winter and spring under the direction of the International Harvester Co. had an effect which it is difficult to estimate and entirely impossible to measure. But the effect must have been very great. When consideration is given the facts that the time and personal co-operation of 2968 International Harvester Co. men were enlisted; that 2127 tractor dealers co-operated and that 41,414 students attended the schools, it must be evident that constructive and educational work of great importance was accomplished.

The purpose of the schools was to teach the tractor owner how to care for, operate, adjust and repair his own tractor. The long experience of the company in building and marketing tractors had shown clearly that this was necessary because it had proven that success in tractor operation was largely a matter of individual knowledge and skill.

No matter how perfect a tractor might be mechanically, nor how well adapted it might be to the work it was designed to do, it could not be expected to deliver its full efficiency unless the man who operated it was competent and skillful. In this respect it was discovered that the majority of tractor owners fell short of possessing the desirable information.

Nor was this altogether the fault of the farmer operator. For the most part, when he bought a tractor, the farmer took under his care and operation a complicated piece of machinery with which he had had no previous experience and which he had to learn to handle before he could expect to get the best results from it.

Perhaps he owned a motor car, and almost certainly he had a gasoline engine, but acquaintance with these merely gave him confidence in his ability to master the tractor in turn, without very materially contributing anything toward that mastery itself.

Accustomed also to handling his power in small units, which he was able to combine up to a certain point by multiplying the number of horses he set to a task, he found himself in possession of a power unit which concentrated within itself more power than that possessed by all his horses combined.

Furthermore, this power manifested itself through mechanical ways which for the most part were hidden from his sight, and would not manifest itself at all unless a series of more or less complicated processes took place in orderly sequence. Any one of these out of order stopped the tractor.

Most farmers acquire a certain degree of mechanical skill. They must do so, for most of their work is accomplished through mechanical means and a certain amount of proficiency in operating these means must be gained. At the best, however, this is apt to be very elementary.

In the past the farmer has called upon the dealer to assist him whenever something beyond his mechanical ability to correct went wrong. Thus, between the two, the farmer and the dealer, a fair degree of tractor efficiency was maintained.

Experience showed, however, that initial lack of knowledge about tractors, and the slowness with which such knowledge was acquired by the farmer when he was left to his own devices, seriously affected his proficiency as an operator and brought upon the dealer and the factory a severe strain both for time and expense in taking care of tractor troubles which the farmer, were he only a little bit better posted, might just as well remedy himself.

### Giving the Proper Instruction

The problem was to bring to the farmer the kind and the quality of instruction in tractor operation which should familiarly acquaint him with the new power unit he had acquired, which would give him



### ENROLLMENT FOR TRACTOR SCHOOL

It is my intention to attend the Tractor School held for the benefit of those interested in power farming.

Name \_\_\_\_\_ Date \_\_\_\_\_

P. O. \_\_\_\_\_ State \_\_\_\_\_ R. F. D. \_\_\_\_\_

Did you attend a tractor school last year? \_\_\_\_\_

Have you a tractor? \_\_\_\_\_ Make \_\_\_\_\_ H. P. \_\_\_\_\_ Factory No. \_\_\_\_\_

Business \_\_\_\_\_

*The card that is used in enrolling pupils*

### QUESTION BOX CARD

**I**f the question you have written on the other side of this card is not answered sometime during the school sessions either in one of the lectures or during the time devoted to the question box, it is because it can best be answered by letter, and you will be written fully on the subject at the close of the school. We ask your permission to do this in some cases in order to save time for the instructors and other members of the school.

Name \_\_\_\_\_

Town \_\_\_\_\_ State \_\_\_\_\_ R. F. D. \_\_\_\_\_

Make of Tractor \_\_\_\_\_ H. P. \_\_\_\_\_ Factory No. \_\_\_\_\_

If I H. C. state whether Mogul, Titan or International

A 194 H. 19-14-G.

(OVER)

*On this card, pupils may ask questions*

the ability to diagnose troubles and the skill to apply the proper remedies; which should make the farmer so proficient in tractor operation that he should be freed from dependence upon the dealer or the factory expert and which should insure, as far as it was possible to insure it, the working efficiency of every tractor in the field.

It happened too that at the time it was imperatively necessary for every available tractor to be working to the limit of its capacity. War emergencies demanded an increase in farm production. The scarcity of labor and the limitations of horse-power farming threw the burden of increase upon tractors. But to secure the full effect of power farming it was

obviously necessary to give the farmers instruction in tractor operation.

Many manufacturers of tractors were turning their minds to a solution of this problem. The International Harvester Co., probably with the largest number of tractors actually in use of any tractor maker, and with probably the best organized selling force in the tractor field, was convinced that some feasible and practicable plan might be devised to bring tractor instruction of a practical kind directly to the tractor owner.

The most feasible scheme which presented itself was to utilize the selling force for the purpose. The plan decided upon contemplated the holding of tractor schools, under direction of the sales or-

ganization, at whatever points in the territory it was possible to gather together on a few days notice not less than twenty-five tractor owners.

These need not be necessarily owners of I. H. C. tractors, for the company conceived it to be as important that owners of tractors of whatsoever make should be instructed as owners of tractors of the company's make.

So, from the very inception of the plan, it was decided to offer the advantages of the proposed schools to all owners of tractors, irrespective of the kind of tractor they might have.

Sometime previously the International Harvester Co. had issued a book, "Internal Combustion Engines and Tractors," compiled from notes on a series of lectures delivered the previous year by Major Oliver D. Zimmerman, of the Engineering Corps of the United States Army.

This book gave a general survey of the development, design, construction, function and maintenance of internal combustion engines and tractors, but without specific reference to I. H. C. tractors.

Probably it is the most readily comprehensible and popular treatise on tractors that ever has been published, while at the same time it is rigidly scientific. It was determined by the International Harvester Co. to make this book the basis of the course of instruction proposed for the schools.

Upon the basis of the principles treated on in this book a double series of charts, 63 x 69 in., printed on muslin, was prepared. There are 33 of these. The first 17 are illustrative of the principles of engine construction and the use of liquid fuels. The second series, 16 in number, deal with the design, care and operation of kerosene burning tractors. Stereopticon slides and other material were provided for.

As a preliminary step each International Harvester Co. branch house was instructed to send to Chicago the best instructed man on tractors in its sales force for a week's intensive training in tractor instruction.

The purpose was to make of this expert the chief instructor in his territory. These men, numbering 100 or more, assembled at Chicago, where for a period of a week they were put through such a course as would make them proficient in imparting tractor information to others.

### THE SEVEN ENGINE SYSTEMS

- |  |  |
|--|--|
| <b>1. MECHANICAL OR POWER SYSTEM</b><br>CYLINDER & HEAD<br>PISTON & RINGS<br>CONNECTING ROD, BEARINGS<br>CRANKSHAFT, BEARINGS<br>FLYWHEEL<br>VALVE & MECHANISM<br>CAM-SHAFT, BEARINGS<br>GEARS<br>CRANK CASE | <b>4. LUBRICATION SYSTEM</b><br>MECHANICAL OILER<br>PIPING<br>GREASE CUPS<br>OIL HOLES<br>BREATHER |
| <b>2. FUEL OR CARBURETING SYSTEM</b><br>FUEL TANK-PIPING<br>CARBURETOR OR MIXER<br>FUEL PUMP   | <b>5. COOLING SYSTEM</b><br>TANK OR HOPPER<br>PUMP-PIPING-DRAINS<br>WATER JACKET<br>RADIATOR-FAN   |
| <b>3. IGNITION SYSTEM</b><br>MAGNETO<br>SPARK PLUG OR IGNITOR<br>SPARK CONTROL   | <b>6. GOVERNING SYSTEM</b><br>GOVERNOR & OPERATING MECHANISM<br>SPEED REGULATOR                    |
|  | <b>7. AIR &amp; GAS SYSTEM</b><br>AIR STRAINER<br>COMPRESSION SPACE<br>INTAKE & EXHAUST PASSAGES   |

A3

### OVERLOADING DOES NOT PAY

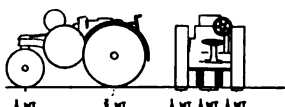
- FOR MAN, HORSE OR MACHINE
- 1. SYMPTOMS OF TRACTOR OVERLOADING**  
 REDUCED SPEED  
(INDICATED BY FEWER EXPLOSIONS—POUNDING—EXHAUST SMOKE DUE TO PRE-IGNITION)
- 2. DANGERS OF DISENGAGING AND THROWING IN CLUTCH**



B24

### DISTRIBUTION OF WEIGHT IN A TRACTOR

- 1 WT.  $\frac{1}{2}$  DISTANCE IN FRONT OF REAR AXLE
- 2  $\frac{2}{3}$  TOTAL WT ON REAR WHEELS



- 3  $\frac{1}{2}$  WT ON FRONT WHEELS
- 4 PRESSURE ON GROUND
- $\frac{1}{2}$  WT TRACTOR—WIDTH DRIVE X LENGTH PRESSURE X NO DRIVERS
- LENGTH OF PRESSURE ABOUT 12 INCHES
- DIAMETER DRIVE WHEELS 34 INCHES

B33

### PROPER CARE OF ENGINE VALVES

1. GOOD VALVE SEATING NECESSARY FOR COMPRESSION
2. TO REMOVE DIRT OR CARBON OSCILLATE VALVE ON SEAT. TAP STEM END AND REPEAT
3. IF INEFFECTUAL GRIND VALVES CLEAN WITH KEROSENE USE VALVE GRINDING COMPOUND
- DO NOT REVOLVE—OSCILLATE
- REMOVE ALL GRINDING COMPOUND



B27

*Four of the charts that are used in instructing pupils regarding the rudiments of gasoline engine operation*



*Another view of the school during one of the sessions*

Throughout the time they were in training a stenographer was in attendance at the meetings and every question and answer was taken down in full. This record later was extended and a full transcript of it given to each man.

When the branch house men left Chicago each was presented with two sets of the charts, a stereopticon with slides illustrative of tractor parts, a transcript of everything that had been said during the period of instruction and a copy of the book, "Internal Combustion Engines and Tractors."

During the time the branch house men were preparing themselves at Chicago someone else at each branch house was doing the advance work in connection with the schools. Arrangements were made with the dealers. Churches or other suitable places were rented or otherwise secured. Farmers, tractor owners and others interested in tractors were invited to attend the schools and en-

rollment of students made. In fact, all of the preliminary arrangements were completed by the time the instructors got back to their respective territories so that no time was lost in getting immediately to work.

Lively co-operative interest was shown by I. H. C. dealers. Everywhere they entered into the plan with enthusiasm and rendered invaluable service in inducing local tractor owners and others interested to attend the schools.

In turn the tractor owners were found to be equally enthusiastic and few needed urging to avail themselves of the opportunity presented. Regardless of distance and weather conditions they came by the hundreds.

The attendance of 41,414 at 579 schools, would indicate an average attendance of over 70. Here and there were schools where the attendance was down to the minimum, of course, but this was more than compensated for by an attendance

at other places which strained the facilities provided.

In this connection a significant fact was that at every school there was at least one banker student, and sometimes two or three. This indicated a lively interest on their part to learn all they could about tractors.

An indication of the general interest is given in the fact that of the 41,414 students, over 14,000 were prospective tractor owners and business men in other lines who were anxious to learn. In not a few instances, tractor owners, after having attended at one school, journeyed to the next and took the course over a second time.

Provision was made at every school for asking questions. Blanks for this purpose were provided, upon which the inquirer wrote his question, with his name and address. Wherever possible the questions were answered during the sessions, but where there was not sufficient time, or when the explanation asked for entailed more attention than could be given to it at the time, answer was made by mail.

Tractor schools are not new. They have been held by several of the tractor manufacturers under various plans for the last few years. Agricultural colleges also have given short courses in tractor operation which have been well attended.

But no such extensive plan ever before was attempted by any factor in the tractor trade as that undertaken and completed by the International Harvester Co. The cost ran into the thousands of dollars, but the company considers that the expenditure of all those dollars has been worth while and profitable. Not one of the more than 40,000 men who availed themselves of the opportunities presented but received something in the way of tractor knowledge which will make him a better tractor operator.



*Dodge Brothers motor cars going over the top—of the incline to the loading platform. This is part of a shipment that was made for the U. S. Army Quartermaster Department*



Photo © Strauss

Charles E. Lightfoot

## What You Must Do to Be a Successful Truck Dealer

By Clyde Jennings

### Progressive Prospect Finding

By Charles E. Lightfoot

**T**HE upbuilding of traffic lines, such as showing an expressman how he can increase his territory and replace long-haul store deliveries at less cost to the store, is a big field for the motor truck dealer. This work is endless and will bear fruit for years after it is started. Also it is progressive, as when one man is aided in this work others see it and are anxious that the same things happen to their business.

This really is a part of the return load proposition. The dealer often finds a man who has use for a delivery truck to make long hauls, say five miles or more, but who has nothing to bring back. A canvass of the community to which this man hauls may find someone there who has goods to come the other way. Neither of these men really can afford a truck for their own business, but either one may be willing to buy the truck if assured the patronage of the other.

Such work makes for the future and for prestige of the truck establishment that does it. Also it shows why so many men measure short as truck salesmen.

**"H**OW do you get truck dealers and how do you educate them to make sales?" The question was asked of Charles E. Lightfoot, branch manager for the General Motors Truck Co. in St. Louis. The question is, of course, a big one and Mr. Lightfoot separated it into many parts as he answered.

"Truck dealers, like truck salesmen," he said, "are very difficult to find. There is no reason why every motor car dealer should not be a truck dealer, except that he will not make himself one. We are anxious to list motor car dealers in our territory as truck dealers, but they must prove themselves to be worthy of selling trucks.

"The dealer contract year for this branch ended the first of the month. At that time I reduced the number

of motor car dealer truck agencies from about thirty to five or six, because they were not dealers but simply poor salesmen. They had put themselves on our list for two reasons:

#### Why They Wanted Agencies

"First, to get the dealer discount for a truck they required for their own use.

"Second, with a view of picking up some easy money when they should hear of someone who was going to buy a truck.

"I am adding other dealers, but of these dealers I am going to require certain things:

"First, that they educate themselves as to the truck proposition.

"Second, that they put one of our trucks in stock and keep one there.

"Third, that they show a willingness to undertake to sell a sufficient number of trucks to make a reasonable showing in their territory.

"Fourth, that they do the missionary work that is necessary in building for a future business.

"Fifth, that they stand for list prices.

"I hold it as a reasonable business proposition that no man will endeavor to do business on a proposition that does not require an investment. Our 1½- and 2-ton trucks will sell themselves, and the dealer incurs no risk in such investment. It merely shows good faith. I would not require that they buy the 5-ton truck.

"We are not now attempting to reform the methods of any motor car dealer's method of doing business.

That may come later, but just now the truck business is too good, sales are too readily made and there are too many dealers who believe that there is need of some article of merchandise to carry their overhead and who are willing to take the truck as that article. Among the many applications we are receiving we are picking out those whose education and business practices are nearest those of our own.

"So far we have found that the Buick dealers are the best in this territory. The principle on which they have been doing business measures nearest to our requirements. They have been trained to know their merchandise and also they have been trained to stand for decent prices. They are willing to lose a sale if there is no profit. They do not do business merely for the turnover.

"The service proposition need not worry prospective dealers. It is much the same as the motor car service, when the latter is done on a strictly business plan. I do not mean, of course, the handling of free service here and there. I take it that those who sell motor cars are going to stand squarely on the factory guarantee and be prepared to charge a reasonable price and give a reasonable service in cases of natural wear and tear in emergencies.

#### Ready to Help Dealers

"Now after we find a dealer who meets our requirements," said Mr. Lightfoot, "we are willing to go into the individual sale proposition with him and to supply such education as he may need."

It might be said here that Mr. Lightfoot came into the truck business with a selling education. He was with the Burroughs Adding Machine Co. for several years and he saw the sales there grow from 7000 machines a year in all the world to 60,000 in U. S. and Canada last year. He has respect for the methods which accomplished that feat.

"I do not agree with all truck sales plans," he said. "I believe that there should be a definite idea as to how many trucks shall be sold. The best key to that is the number of trucks in use. I believe in the territory quota plan. I give salesmen and dealers an idea of what is expected of them and demand that they live up to that requirement or show good reason why.

"Acting on this principle, the selling ratio for a given territory grows, as it should. Our trucks are worth while and each truck running is an advertisement and an education if properly handled.

"Every man who uses two or more horses is a prospect, the only question is reaching him. Of course there must be education.

"Here in St. Louis we are going ahead just now on the supposition that we are going to have enough trucks to supply the demand. We are preparing the ground for future sales, as well as making the sales that we can. We figure that if we do not at all times get as many trucks as we want they will come through sooner or later and it will be easier to sell to a man who is waiting than to one who has never been approached. A recent incident will show what I mean by this work:

#### The Case of O'Connor

"An Irishman named O'Connor, who employs 14 teams hauling coal, happened by. I got to talk to him for a few minutes. I approached him on the truck proposition. He said:

"'Nothing doin', all the teamsters who are using trucks are losing money.'

"'That may be true, but are not the men who are using teams losing money also?' I countered.

"'There may be a bit of truth in that,' he said.

"Then I showed him our maintenance cost sheet. In this we have figured cost of truck, body, cab, etc., making the complete outfit on each unit we sell and have reduced the interest to a per day figure.

"In another table we have compiled all of the available costs, tires, gas, oil, driver, depreciation, etc., from average figures obtained from 50 trucks in actual use. These two tables show the actual cost of the trucks per day. We have gone further and showed just what it costs to run a truck 10, 20 and on up miles a day. The figure for a 2-ton truck for 50 miles a day is \$11.60, say.

#### How to Use Figures

"This figure startled O'Connor a bit, just as I had intended that it should. By doing this it gave me the opening. I began to figure his cost with teams.

"He had never kept books well on his overhead. So I asked questions and took the figures that he gave to me for his daily expense. I found that he had not really figured his investment. He had taken some things for granted, such as the veterinary, the shoeing bill, occasional death of a horse, and many other things.

"O'Connor really was a business man and he quickly saw the point. He invited me to come over and talk

to his office man. He is going to keep books on his plant differently, and eventually will charge a better price for his work, but what is more to the point, he will sometime soon buy trucks. As a last word to me, he said:

"'I have talked to a good many truck men, but no one ever showed me those daily cost figures, nor how to get them.'

"That is the work we believe is before the dealers now. We want dealers who will realize this. We believe there is plenty of business in sight and that a good part of it can be supplied even during the war, but if it should happen that the demand will outrun the supply then they can sow the seed for future business.

"Some day that business will come with a rush and the man who has been cultivating his field by education will realize the profit. He, perhaps, can carry his overhead in the meantime and at the same time realize that he is carrying that overhead, maybe at a sacrifice, with something definite in view.

#### This Man Studied Trucks

"Let me say this: We recently put on a dealer in a small city near St. Louis who put some trucks in his motor car salesroom. More than that, he came over here and studied trucks. He now knows them. He now knows what we believe is the best method of selling them. He has sold a good many small trucks. But last month he sold two of the 5-ton coal trucks. The first sale was by convincing a prospect that all G. M. C. trucks were good trucks and then he brought him over here and sold him from our sample. This truck was put to work at once. This dealer sold the next truck by showing his prospect the first one at work. The buyer did not see the truck he had bought until it was delivered. Those two sales netted that dealer \$1,600. It certainly was worth while.

"It certainly is worth while for a motor car dealer to educate himself along this line. God help the man who, fearing the war will close his business, merely sits down and deplores the war. Our idea here is that this is the time to be up and going every minute. Every man owes it to himself, his country and civilization to do the very best he can to keep his business going and to supply himself with money with which to help war funds, buy Liberty Bonds, pay excess profit and income taxes and to be ready to serve when needed and to have his business in a prosperous, looking forward condition."



# Who Pays for Kelsey's Advertising?

By Elmer L. Allen

**M**AYBE you haven't thought much about this before. And maybe if you have thought, you have not thought along quite the right lines.

**W**E believe this is one of the best articles that has ever been written in answer to the question: "Does it pay for the dealer to advertise?" Read the article.—  
EDITOR.

**S**OME dealers argue that because they do not advertise they give better values, sell at lower prices and offer better quality goods. The money that advertising costs goes into the goods or the service, they say.

A great many accessory dealers and garagemen say they do not advertise because it costs too much money; they cannot afford it; they cannot make their customers stand for it, and their business won't stand it. And others have tried it and—well, advertising doesn't pay!

But advertising is paying thousands of businesses. Thousands of retail stores, shops, manufacturing concerns, jobbers and men in every line of business are growing more and more successful each year, and are building up larger and larger businesses and making more money for themselves, and are at the same time spending hundreds of thousands of dollars for advertising to make their businesses grow faster and surer.

## The Morning Ham an'

But who pays for the advertising?

It cannot be answered in a few words. It needs an example, and an analysis of the example. But when you smoke an advertised cigar you do not pay for the advertising. When friend wife sets before you the morning ham an', and the ham is an advertised brand, you are not paying for the advertising. When you sell an advertised article, neither you nor your customer pays for the advertising of that article.

Advertising is an economy. Advertising that is good and proper advertising is not an expense, only as you charge it among your general expenses. Advertising, combined with increased

sales and a larger sales volume, is an investment that brings a return far greater than the return on any other business investment. It is, because advertising protects and makes good all your other investments. Advertising lowers selling expense, which in turn lowers selling prices. Advertising makes it easier to secure new business and to hold the old.

Perhaps you don't believe it. Perhaps you have spent money for advertising and now know "it doesn't pay." All right! But plenty of other men situated exactly as you are are now advertising every day and increasing their sales and enlarging their businesses with the help of good advertising carefully conducted.

Who pays for the advertising? Well, let's see who does pay for it.

## Here's a Good Example

Here's an example. Here are two rival stores both selling the same general class of goods, automobile accessories in a medium size city. One on one side of the main street, the other directly opposite. Let's agree that their locations are equally good. Their stores are about the same and they sell at about the same general prices.

One fellow doesn't advertise at all. He pays \$40 a month for rent. He has one clerk and pays him \$60 a month. His light costs him \$9 a month. Other expenses, such as wrapping paper, string and such things, cost him \$21 a month. Total expense, \$130 a month.

This store takes in about \$25 a day. In a month of 26 days it runs an even \$650. The average gross profit is 40 per cent of the total sales. That makes \$260 a month gross profit. Deducting the expenses of \$130 the owner has \$120

left for himself and as interest on his investment.

But Kelsey runs the store across the street. He pays the same rent, but he has two clerks and he pays one \$80 a month and the other \$100 a month. His light costs a little more than the other fellow's, and he has other small expenses which also run a little higher than his competitor. All together, Kelsey's expenses are \$265 a month. But Kelsey spends \$50 a month for advertising.

Who pays for Kelsey's advertising?

Somebody pays for it. Is it the customer who buys at his store? No! Is it Kelsey himself? Well, he pays the bills all right, but he doesn't pay for the advertising. Who does pay for it? Let's see!

These two stores sell about the same kind of goods and, on the whole, sell at about the same prices. Their margin of profit is the same—40 per cent.

But Kelsey, instead of taking in only \$25 a day, takes in \$60 a day on the average through the month. His total sales for the 26 days foot up to \$1,560.

On the same profit margin Kelsey makes a gross profit of \$624 a month. Deducting his expenses of \$265 and his advertising of \$50, he has \$309 a month for himself and as interest on his investment.

## Who Pays the Bill?

But who pays that \$50 for advertising?

Kelsey sells at the same price and makes the same percentage of profit. *His customers didn't pay it!* Who did?

Well, the owner of the two stores paid some of it because he didn't charge Kelsey any more rent than he did the other fellow. The Electric Light & Power Co. paid a little of it, too, because the bill of the non-advertiser was \$9 while Kelsey's bill was \$14 instead of being increased in the same proportion that Kelsey's sales were increased.

Then the two clerks paid some more of it, and were glad to pay it. They had once worked for a non-advertising store-keeper for \$60 a month and were now working for Kelsey for \$80 and \$100 a month—an increase in their wages of \$20 and \$40.

## Advertising Increases Volume

But the outstanding fact of this comparison is that Kelsey's greater volume of sales not only paid for his advertising

but enabled him to sell more goods at the same price, or possibly at a lower price, and made more money for himself and for his helpers.

*The whole meat of the matter is in the proved fact that advertising increases the volume of sales and decreases the percentage of selling expense, leaving a larger profit in actual dollars and providing the money with which to carry on still greater advertising.*

The goods have little to do with it. The manufacturer makes his goods, the jobber makes or buys his, the retailer buys his, the shop, or garage, figures the goods in terms of labor.

But it makes no difference where the goods come from, what they cost or what they sell for; providing, of course, that they represent good value for the price asked.

The answer is found in selling the

goods. How much of these goods, or of this service, can be sold? All that can be sold can be secured. The answer is in increased volume of sales. And advertising increases the volume of sales.

Get down to a one article basis. You can sell one article and make one dollar. But you cannot do much advertising on what you can spend out of that dollar. But when you sell ten articles and make ten dollars you can then spend two or three of that ten dollars for advertising, and by spending these two or three you can sell ten more articles and repeat the process with profit and increasing business.

Volume of sales pays for advertising. Kelsey pays for his advertising out of the increased dollars of profit his larger volume of sales bring in. He pays his greater expenses, pays his help better and so keeps them satisfied and glad to

wait on more customers; he has more for himself, more capital to enlarge his business and increase his stock; all furnished by the more dollars his advertising makes for him.

You may say this does not apply to your business. But it does. It applies to any business. There isn't a store in the country that couldn't increase its sales 50 or 75 per cent, and do it without any such proportionate increase in overhead expense or in selling cost. And advertising will produce the increase.

Therefore, advertising is not an expense. It is an economic saving. It works backward and forward. It makes increased buying necessary, and provides the customers to buy the additional goods.

But who pays for Kelsey's advertising?

Why, the store across the street that doesn't advertise!

## *The Trailer as a Transportation Aid*

By L. E. McGLAUGHLIN\*

**T**HE present transportation demand being made on the railroads—not only on account of the immense number of troops being moved, but because of the quantities of material and supplies which also have to be carried in connection with troop movements—is an unusual strain upon the ordinary transportation facilities of the nation.

In addition to the troop and army supply overload on the railroads we have also the immense amount of war material and supplies which are being rushed to tidewater to make up shipments to the Allies. These conditions put the transportation of ordinary industrial products over the railroads into a very unsettled and unsatisfactory condition.

Freight rates have all been increased and there has been a very sharp advance in short-haul charges in an effort on the part of the authorities to keep down, to the minimum, transportation of ordinary supplies.

### War Unsettles Conditions

Every war in the history of the world has brought about an unsettlement of ordinary conditions to meet which many devices and appliances have been developed and brought into general use in a manner which did not seem possible or practical in the piping times of peace.

One of the after-advantages of the war seems to be that it shakes men and things from the rut in which they had settled, and brings new forces into play which always results advantageously to the nation as a whole.

The most important advantage we will gain from the chaotic conditions of railroad transportation caused by the

present war is the development to its full efficiency and general employment of the motor truck as a power unit for short hauls.

I speak of the motor truck as a power unit advisedly. The motor truck on a short haul represents to this form of transportation just what a locomotive represents to the railroad. It is as fundamental as the force of gravity—"That it is easier to pull than to carry." Evidence is to be secured from source rather than the building of the Egyptian Pyramids. The materials of which they are built were "trailed" rather than carried. The steam engine and its train, the tugboat and its barges are modern examples of the trailer principle. And now the motor truck has shown itself successful and decidedly efficient as a tractor.

### Getting Maximum Performance

This all leads to the conclusion that to obtain the greatest benefit from the motor truck we must use it in connection with the trailer, as the trailer enables us to get maximum performance as a haulage proposition out of the motor truck. Investigation and actual performance have proven that the average truck supplies drawbar pull sufficient to haul about three times as much as it can carry.

Thus, a truck rated at 1-ton, carrying capacity will haul a semi- or pole-trailer with three times this load, or three tons. And the load on the trailer will be taken care of under practically all of the conditions under which the truck alone can carry one ton.

The average 2-ton truck with an appropriate trailer will handle a 6-ton load under normal conditions. And a 3-ton truck a 9-ton load.

Each type of trailer—two-wheel and four-wheel—has its definite uses and application, but the two-wheel trailer meets

much the greater number of hauling conditions. It is handier, more compact and the semi-trailer and truck combination is considered a single unit, and in this direction fully complies with city, state and county ordinances. The semi-trailer does not require an extra man to handle it under any circumstances, as it can be backed and turned very easily by the truck driver alone.

The turning radius of the six-wheel unit—that is, the truck and semi-trailer—is no greater than that of the tractor-truck itself, and it can be handled in practically the same space. The backing is accomplished in exactly the same manner as with a horse and wagon.

These features are immensely important when the truck and trailer are to operate in cities or when cramped quarters can only be allowed for loading. Rough, winding loads indicate the use of the flexible semi-trailer over the four-wheel trailer.

Now the question of economy is one which is uppermost in everyone's mind at the present time, and I will deal with the trailer from the standpoint of economy and saving.

### Saving Whole Freight Trains

The first cost of the truck and semi-trailer effects an average saving of 35 per cent in comparison with the cost of a single standard truck of the same carrying capacity as the truck and semi-trailer. Actual experience has shown that the use of the proper trailer with the truck adds less than 15 per cent to the maintenance of the tractor alone. This means a continual saving of 10 to 20 per cent in comparison with the single truck of the same capacity as the six-wheel unit.

Then we have the increased value which you are able to obtain from the truck when it is working in connection

\*Sales manager, King Trailer Company, Ann Arbor, Mich.

with a semi-trailer. This increased hauling capacity should, of course, be counted as an actual saving. For instance, there are in the country at the present time approximately 435,000 trucks in use with an average capacity of  $2\frac{1}{2}$  tons each. If each of the trucks was connected with a semi-trailer the increased hauling capacity would be equivalent to 5000 trains of 55 cars each.

The semi-trailer can be used in relays, which means a still further increase in the hauling efficiency of your truck because, while one trailer is being loaded at one end of the trip another trailer will be discharging its load at the other

end, and the truck itself will be either delivering a loaded trailer or returning with an empty trailer after re-loading.

This means maximum work being obtained from the motor truck at a greatly accelerated speed in hauling which, of course, in these times means making your truck a much more profitable investment. Whenever the hauling proposition is one of loading at one common point and delivering at another, this relay system will prove of immense value. If more than one loading station is used additional trailers can be operated to advantage.

Two typical examples would be lumber hauling from the woods to the mill

and parcel delivery from department store warehouses to distributing stations. These, of course, are but typical instances where valuable results may be secured in the use of trailers in relays. Wherever the load carried is made a part of a large number of parts "a multiple piece load," whenever for any reason loading or unloading consumes a great deal of time, or whenever the whole load goes to one destination, hauling costs will be cut to the lowest possible minimum by the use of semi-trailers in relay.

The trailer is not only logical in theory but it has proven itself practical and efficient in practice.

## Note—*This Is More of a Report Than a Story*—Ben Brown

### Who Pays for Your "Free Air" in the End?—This Man Believes That Charity Begins at Home

THE owner of a building used for a garage in a Missouri town recently took charge of the garage himself when the young men running it went to war.

His first act was to put the following sign in the window:

"Free Air to Customers Only.  
"All others, 10c. and 20c."

"What's the idea?" he was asked.

"The boys who were in here were clever, fine boys, honest and eager to succeed," was the answer. "But they let the public run over them. Everybody who wanted to came in for free air, for instance.

"Our air is in the middle of the garage, as you see—not outside. The general public, especially a lot of inconsiderate fellows, used to fill the garage space until there wasn't room for our regular customers to get around.

"We've cut them out now. Our own patrons come in, run their cars into a stall, and fill their tires, without having to wait—and they are courteous and thoughtful of the convenience of others."

"The trouble with those boys," spoke up a by-standing native of the city, "was that they didn't charge for little service. At least the mechanics didn't. The mechanics' wages kept running along every minute—but frequently the men would spend 15 minutes or so on a little job, and generously tell the customer that there was no charge. They were good friends of mine, and I used to tell them that they were giving their profits away. But they insisted that they must give a certain amount of free service or the people would go elsewhere."

"That's the trouble with nearly all the garagemen in this town," said a banker. "They work hard and seem to have every reason to succeed—but they don't get back all they pay out for supplies and service.

"Salesmen come into our bank and ask us about the financial standing of garagemen. I have to laugh at them. 'You know as well as I do that these fellows aren't making money—you can tell it by

watching the way they give away their service,' I tell these salesmen. I know what they are after. Their own judgment tells them that the garagemen here are frittering away their resources, and the salesmen think maybe they can get the good word of a banker for the garageman on which to base a recommendation to ship goods.

"The men who own the shops keep several mechanics because they are afraid to let a job get away from them—they have payrolls of \$75 or \$100 a week that they have to meet—and then give away half of this expense in free service.

"Why, I've been in these shops during the day when mechanics have been idle for half hours and hours at a time—and the same nights the mechanics are kept late, being paid overtime, to make repairs for which the garagemen charge daytime prices!"

"No more free stuff for me," said the garage owner. "Storage business nets me a little profit, and there is always plenty of that—if the patrons don't want to pay my prices for other service they can go elsewhere for it—which many of them do."



RING IT AGAIN!

ONE of the three farm lighting plant exhibitors at the state fair was looking for agents—and he signed contracts for most of the districts into which he wished to go. A majority of the contracts were with garagemen.

A salesman for one of the lighting plants who was present to get acquainted with prospects in his territory has placed around 100 in about two years; in four cases he has had calls to go back to find out why the plant wouldn't run; simple adjustment fixed the plant in each case, adjustment that the local electrical service man could have made—or the owner himself if he had read his instruction book.

# Recommend Air Minister

## *Senate Report on Aircraft Says Single Head is Necessary—Makes Many Suggestions for Improvement*

WASHINGTON, Aug. 31—The long-expected report of the Senate Military Affairs Committee which has been investigating the aircraft situation has been made public. And while it places a measure of blame where blame is due, it is also highly commendatory regarding results which have been obtained in the face of great difficulties.

The most important findings of the Committee, as contained in the report of that committee issued Aug. 22 are:

A substantial part of the airplane appropriations have been wasted.

No battle, bombing or fighting planes have been produced to date.

Placing and subsequent withdrawals of orders for planes and engines have been frequent occurrences.

Experimental fields were selected injudiciously by biased opinion.

Profit for the manufacture of airplanes and engines is excellent but is not yet perfected to a proper degree.

Our Allies have been unable to deliver the requisite number of airplanes because we have failed to supply them with raw materials.

Our training fields are excellent.

The original Aircraft Production Board is responsible for the delays, procrastination and lack of responsibility, expert knowledge and decision.

The present air service executives are performing excellent work but lack efficiency because of possible differences of opinion.

### The Committee's Recommendations

Recommendations of the committee include: An Air Ministry headed by a Secretary as a member of the President's Cabinet.

Commissions of engineers and pilots to work in relays of observation between America and the front:

Details of the delays and of the frequent countermanding of orders and conflicting of orders.

Six hundred and one De Haviland 4 airplanes equipped with Liberty engines had been shipped to France up to Aug. 1, according to the report, which says that \$6,500,000 was expended on the Bristol fighter which was then discarded.

Three chief causes are named for the disappointing airplane results, namely:

1—The airplane program was placed in the control of great motor car and other manufacturers who were ignorant of aeronautical problems.

2—These manufacturers undertook the impossible task of creating an engine which could be adapted to all classes of

flying craft, and subordinated our air program to that engine.

3—We failed at the beginning of the war to adopt the approved European types of airplanes which should have been done co-incidental with the production of the Liberty engine.

The committee states this brief summary is not a wholesale condemnation of our airplane production. Much has been accomplished. The committee reports that while it believes there are many things to be remedied, nevertheless we are approaching a period when quantity production may be hoped for.

In summarizing the report states that on April 6, 1917, we entered the war, and on June 8, 1917, an announcement was made that a fleet of 25,000 airplanes was to be created.

On July 24, 1917, \$640,000,000 was appropriated to carry out the aircraft program, which fund has been exhausted either by actual expenditure or commitments.

A further appropriation of \$884,304,758 has been found necessary.

### Money Practically Wasted

In the opinion of the committee a substantial part of the first appropriation was practically wasted. While much good work has been accomplished, for which the committee states due credit should be given, it must be admitted that our airplane program up to the present presented many aspects of failures. While an army of 3,500,000 men has been made, the air craft situation is as follows:

Our attempt to create a fighting plane was centered in an effort to adopt the Bristol fighter and the De Haviland 4 to the Liberty engine. The Bristol was put into quantity production without sufficient test and over \$6,500,000 was expended and the lives of several men sacrificed when the machine was condemned and its manufacture discontinued.

After more than 1200 Standard J training planes equipped with a Hall-Scott engine had been manufactured, at a cost of \$6,000,000, the machine was condemned as dangerous and placed in storage.

An oral order was given the Curtiss Aircraft Corp. for 3000 Spad machines early in December, 1917, and later in the same month, Col. Clarke and Major Jesse G. Vincent found that the machine could not be operated with a Liberty engine. On Oct. 8 of the same year the contract was cancelled, the reason given being that the single-seater fighter was obsolete;

but, states the committee, on April 23, 1918, contract was let to the Curtiss company to build 1000 S E 5, the English equivalent of the Spad. The cancellation of the Spad contract and the failure of the Bristol left us without a single- or two-seated fighter except the De Haviland 4 which we are equipping for reconnoitering, although it was originally designed as a fighter.

As early as October, 1917, we were in possession of the facilities for construction of the Caproni planes. Expert Italian engineers have been here since June, 1918, but we have up to date constructed only one Caproni plane. Nearly a year has elapsed since we might have begun work on these machines and by this time should have been in quantity production.

The Handley-Page bombing plane is another example of our delay. Plans were furnished the Signal Corps as early as the summer of 1917 and contracts were being made until February, 1918. Delivery on these was not begun until August, 1918. The first Handley-Page plane was flown last July. Tests are not yet complete.

### Approve Liberty Engine

The Liberty engine is approved by the committee but is said to be imperfect yet, though rapidly approaching perfection. The committee complains that fighting planes have not been built around the Liberty engine and that our aircraft program will not be complete until one is. Only 2114 airplanes have been delivered to our army in France by our Allies.

The profits on the Liberty engines by our manufacturers are said to run as high as 34 per cent and on the Liberty engine aluminum pistons as high as 285 per cent on the capital invested. Numerous examples are told of in the report of the placing of contracts and their subsequent withdrawals to show the indecision existing with the original Aircraft Production Board.

The report condemns the construction of the McCook field at Dayton as an experimental field and of the Wilbur Wright field. The committee states that it feels obliged to note in the connection that shortly before negotiations for the McCook and the Wilbur-Wright fields were completed Col. E. A. Deeds, a member of the aircraft board, was the owner of the first and a part owner of the second. He sold and transferred them to interests with which he had been identified. The committee states the number and amount of contracts for planes and engines assigned to concerns at Dayton and Detroit, and the number and collection of aviation fields at Dayton could not fail to attract the attention of the complete senate committee. Due to the vast motor car industry, Detroit doubtless possesses more facilities for gas engine production than any other American community.

Industrially considered, the concentration of a great number of these two pursuits in these two cities may perhaps be justified, but the committee is forced to the conclusion that the personnel of the aviation board from its formation to its reconstruction explains the fact.



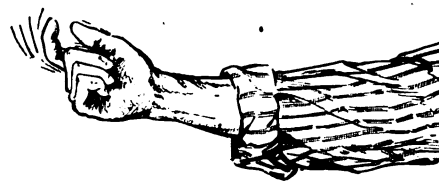
## One Minute, Boys—

Reilly Has a Word to Say About the

# W. S. S.

Give Him Your Ear for a Minute or Two

By RAY W. SHERMAN



*"You know, Tommy, that's another thing a lot of us forget: That this is our war. We think that it's almost anybody's war except our own, and often we don't take a great enough personal interest."*

"TOMMY," said Reilly, as he hung up his hat and, as he often did, sat on the corner of Tommy Trumbull's desk.

"All right," replied the sales manager—and some-day-to-be-general-manager.

"Burton of that War Savings Stamp thing called me up this morning and wanted me to come down and see him. I just got back. He wants me to serve on the Callawassa W. S. S. Committee—and do some work. The Lord knows, I've got work enough right here these war times, but what can I do? If he says come, what answer can I make? I'll have to serve in some way or other—or you will. We can't turn our backs on the cause. Can we?"

"Hardly," admitted Tommy.

### To Help Mr. McAdoo

"You know—" and here Reilly readjusted himself on the corner of the desk, as though for a permanent stay, "you know, I think maybe we business people haven't been paying as much attention as we might to this War Savings Stamp thing. I think we can do a lot to help old McAdoo out—and never mind it at all."

"I wouldn't wonder," assented Tommy.

"I remember when the stamps were first brought out, and they started to build the campaign around those three letters—W. S. S.—it seemed to me such a cold, impersonal proposition that I couldn't warm up to it at all. The W. S. S. seemed such a poor thing psychologically for propaganda purposes. No one knew what the letters meant, and therefore everybody had to be educated to the meaning of the letters before the campaign could be instituted with any force.

### Sort of Overlooked Stamps

"The three letters had not the same effect as does the word 'bonds,' because everybody knows what a bond is. Then, the stamps are such little things that I guess I sort of overlooked them. I have bought Liberty Bonds, as have most of the people in our organization, but I thought in big figures and this twenty-five-cent idea seemed rather beneath my notice—so I didn't put forth much effort on it.

"Also, the W. S. S. people said for us to put our spare quarters into stamps, and I never had a clear idea as to what

a spare quarter was. I always have a lot of quarters in my pocket, and if I spent them I would only get more, and if I spent those I would only get some more. Finally I might have to dig down pretty deep into my cash, and then I might discover I had gone too far. So, you see, the whole thing was pretty indefinite in my mind.

### \$6,250,000 a Week

"But what interests me now, Tommy, is not the buying by myself, personally, but by the people in our organization. We should ALL be doing something with this savings stamp thing. We should all be buying, even if we don't buy a great deal. The constant dropping of water will wear away a stone and the constant clinking of these quarters will make a terrible din in the Kaiser's ears.

"If every business house in America would start a movement among its employees for the buying of a stamp a week by each one it would reach about twenty-five million people, according to my best guess, and if each one bought a stamp a week it would amount to \$6,250,000 a week. In a year this would be \$312,500,000. In addition consider the amounts that are bought by people who buy more than a quarter's worth at a time. It would make an enormous amount if everybody got behind this W. S. S. thing. And it wouldn't be a great hardship on most of us.

"The trouble with us business houses has been that we have looked at the big things in a big business way and have overlooked the little twenty-five-cent W. S. S. part of the financing of our government. What I propose to do is get all our people interested in these stamps. I'm going to ask them to form themselves a sort of War Savings Society and buy what they think they can buy each week.

### Get the Trade Busy

"A lot of them are paying for bonds, and to the Red Cross and other things, but there are not many in the organization who can't buy a few stamps, even if they buy only one a month. But I think most of them could buy one a week. Any way, let's try it and see how it works out."

"All right," agreed Tommy.

"And then," Reilly continued, "after we get started here and find out how the

plan works out I'm going to have a meeting of the trade association called and put the proposition up to all the boys along the row. I'm going to have our plan set down on paper in detail so there can be no misunderstanding it and pass the idea along to all the rest of the boys.

"Then, if we can get from twenty-five to fifty firms in Callawassa doing the same thing it will add quite a little to the funds the government needs to win OUR war.

### This Is OUR War

"You know, Tommy, that's another thing a lot of us forget: That this is OUR war. We think it's almost anybody's war except our own and often we don't take a great enough personal interest in it. We all sit back and criticize and tell how we would run it if we were doing it and then we pass up the part we ought to be doing.

"There is another Liberty Loan coming the latter part of the month, but that's no reason why we shouldn't keep on buying savings stamps whenever we can. Furthermore, most of us will find, after we have decided how much we can pay a week on bonds, that we can still spare a little more—and the stamp furnishes a fine place for that little more and unconsciously serves to teach us thrift.

### Get Your Money Any Time

"Also, if we use the stamp to see how much more we can carry we may discover that on the next loan we can do better than we estimated when the preceding loan was on. The beauty of these stamps is that you can stop paying any time and get your money out. You can always cash them. There is great flexibility in them."

"Yes, that's true," Tommy asserted.

"Of course," Reilly added, "one of the country's leading bankers, who is managing this loan, stirred up a lot of bad feeling by talking through his limousine window about ragged pants—on other people—but I don't think we ought to let our personal feelings toward any individual stand in the way of the success of our country's great enterprise. So, even if I do choose to keep my pants patched, I think it's my job to help the big job along just the same.

"What say?"

"Yes," said Tommy.

*A Department of*

# BETTER MECHANICS

*No. 80 (Concluded)*

## *Installation and Adjustment of the* Dyneto Farm Lighting and Power Plant

By J. HOWARD PILE

### *2—Adjustments*

THE adjustments on many parts of the engine are very similar to adjustments on an automobile. In fact the engine operates on exactly the same principle with the exception that there is only one cylinder. The connecting-rod bearings are provided with shims of varying thicknesses and the tightness or looseness of these bearings is adjusted by removing the shims and replacing them with others of the proper thickness. Liners of sufficient thickness should be used so that the bolts can be drawn up tight and yet leave the rod free to turn without binding.

The needle valve of the carbureter is best adjusted after the engine has run long enough to become warmed up. It should be turned down (in a clock-wise direction, looking from the top) till the engine gives sharp, weak explosions, and then turned back a little. Too much gasoline will make the exhaust smoky and black the same as in an automobile engine. A blue, smoky exhaust indicates too much oil in the base.

Ignition of the charge is made by a spark plug which is exactly the same as automobile practice. The source of current is the storage batteries and this is taken from the three cells on one end of the battery, giving a current of 6 volts. This current is transformed into high tension by a vibrator coil.

To test the coil and plug, unscrew the spark plug from the cylinder, connect the wires to it and lay the inner end of it on some metal part of the engine. Close the ignition switch and turn the flywheel till the cam in the timer touches the spring. If the vibrator screw is adjusted properly, it should give a steady buzz and a bright blue spark between the points of the plug. If the spark is not good or if it is not blue, clean the points of the plug and try it again. If the coil buzzes and there is no spark at the plug, the trouble is with the plug. When the vibrator is properly adjusted, it will start instantly and will show little or no spark at the points underneath the screw.

The points of the plug should be gapped  $1/32$  in. or the thickness of a dime (see Fig. 11). Too heavy a current or too close an adjustment of the screw may burn the points of the vibrator and screw and this can be remedied by smoothing them off with a fine file or a piece of emery cloth.

#### The Governor

The motion of the engine raises the governor weight, Fig. 12, from the hub of the wheel until it comes in contact with the governor shoe and hooks the governor latch into the governor block when the rocker arm is in its highest position. This holds the exhaust valve open and cuts out one or more of the fuel charges, admitting them just often enough to hold the governor weight out of the right position to maintain the speed at which the engine is set to run.

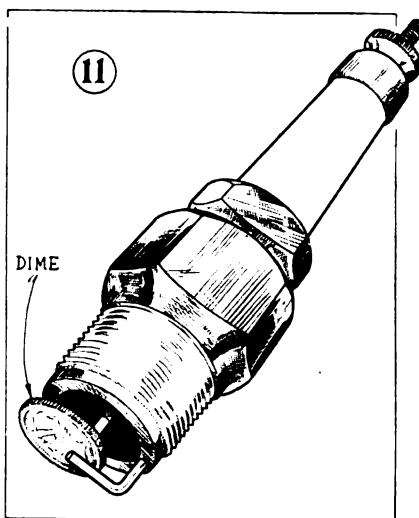


Fig. 11—A dime may be used as a handy spark plug gage. If it fits snugly between the points, the gap is correct

1—The speeder screw changes the speed by raising or lowering the governor shoe. This should be adjusted only when the engine is running with no load.

2—The highest position of the rocker arm should allow the governor latch  $1/32$  in. clearance or the thickness of a dime under the governor block.

3—The governor latch is adjusted end-wise for wear.

4—A variation of the tension on the governor spring in the flywheel is sometimes necessary to get a uniform motion at a very high speed or a very low speed.

#### Timing the Valve

Only one of the valves is operated mechanically and this is the exhaust valve. It is operated by a cam and it should begin to open 25 deg. before lower dead center on the explosion stroke and should close 10 deg. after upper dead center. The engine is on upper dead center when the piston is at the top of its stroke and this position can be ascertained from the outside of the engine by observing the key on the flywheel which is at the bottom of the shaft when the piston is at the top. See Fig. 12.

1—If the exhaust valve opens too early and closes too late, or opens too late and closes too early, set the valve by raising or lowering the adjusting nut on the valve stem.

2—If the exhaust valve opens too early and closes too early or opens too late and closes too late, the gear will have to be moved one or two teeth.

#### Engine Troubles

The troubles with the engine are not different from those ordinarily experienced with other types of four-cycle engines. The remedies in some cases, however, can be specifically rather than generally given.

1—If the engine is hard to start or will not start at all check over the following possibilities:

Weak batteries.

Poor compression (leaky rings, leaky valve, etc.).

Dirty spark plug.

Bad adjustment on vibrator.

No gasoline in tank.

Needle valve set down too far.

Carburetor flooded.

Water or dirt in gasoline.

Broken or grounded wire.

2—If the engine runs, but does not develop power, one of the following troubles may account for the loss of power:

Lack of oil in cylinder.

Hot bearings.

Spark set too late.

Gasoline not regulated right.

Gasoline pump not delivering sufficient fuel (see Fig. 13).

Governor out of adjustment.

Valve stem sticking.

Exhaust valve adjusting nut loose.

Valve setting wrong.

Weak batteries.

3—If the engine pounds or knocks, analyze the pound and see what the cause is. If the pounding occurs at every other revolution, look for loose connecting rod bearings or loose flywheel key. If the pound occurs at each explosion, the spark is probably set too early. If the pounding only occurs after the engine has run for a while, the oil may be too low in the crankcase or the water may be too low in the cooling tank.

4—If the engine overheats, the cause may be lack of oil, spark set too late, lack of water, too much gasoline or a stopped up or restricted exhaust pipe or muffler.

5—Missing explosions are caused by weak batteries, bad mixture, loose or broken wire, water in the gasoline, circuit breaker not in contact long enough, bad adjustment on the spark coil, or a dirty spark plug. If the engine makes a loud report occasionally while running, this is caused by the gasoline valve being out of adjustment or the pump is not pumping enough gasoline. Clean the carburetor and adjust the needle valve.

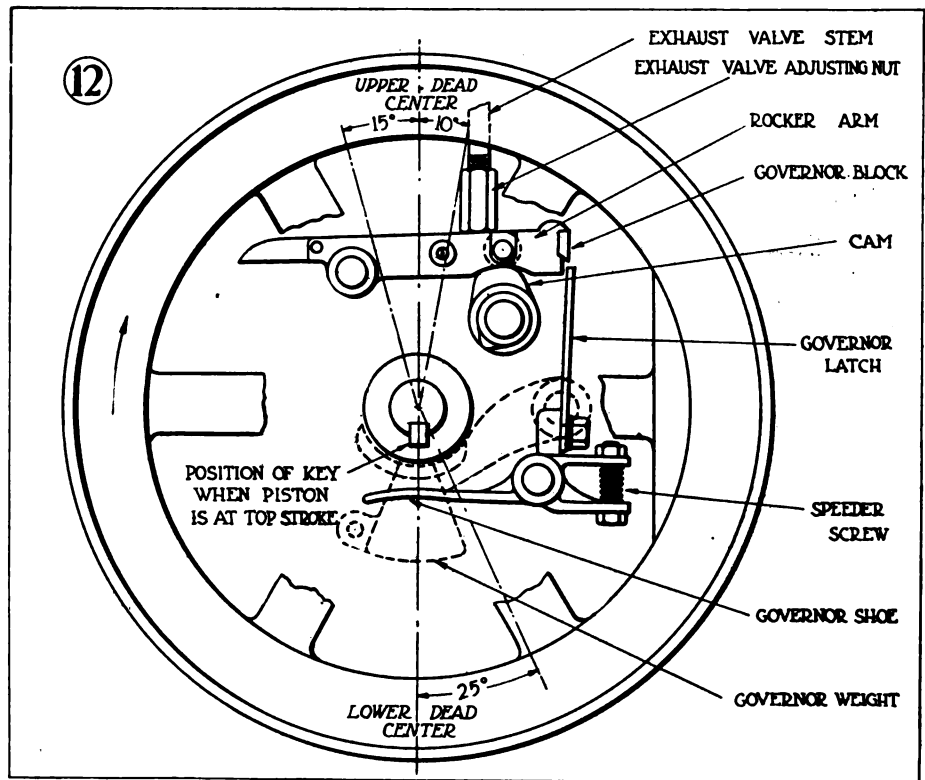


Fig. 12—The governor on the Dyneto farm lighting plant is of the hit-and-miss type, by which the speed can be maintained constant. It operates by holding the rocker arm away from the cam when the speed tends to increase beyond the limit set. A delicate adjustment is provided

6—When the speed is irregular (caused by missing explosions) the governor latch is too high to hook in freely or else the governor spring needs adjusting.

#### The Generator

The generator should be kept reasonably dry, although there is no objection to having it installed in a damp cellar or basement. The armature revolves on ball bearings which are packed in soft grease, and further lubrication is by

means of an oil cup on each bearing, each cup to be supplied with a few drops of oil each week. Oil and grease should be kept away from the machine. The generator turns in a clockwise direction as you face the commutator end of the machine, and this is the standard direction of rotation unless it has been specifically ordered in the other direction.

The normal speed of the machine is 1800 r.p.m., and if engines other than the one supplied with the outfit are to be used pulleys should be arranged to provide this speed under average load. If the speed is too high, the current generated will be too great for the machine and it will burn out. The maximum capacity of the machine is 15 amperes, and under no circumstances should this output be exceeded.

Assuming that the pulleys are so proportioned as to give the correct speed, the output of the generator can be controlled by the rheostat on the switchboard from the maximum down to the smallest rate required by the battery.

The brushes are of a special composition, and in ordering the new ones specify for Type BFL generator. There are two brushes and they are held against the commutator by coiled bronze springs. The brushes may be worn down to a length of  $\frac{5}{8}$  in. before they need to be replaced. When installing new brushes be sure that they slide freely in the holders; otherwise they will spark and will not make good contact. Be sure that the "pigtailed" are firmly clamped down under the connection screws of the brush holders. Never remove the brushes

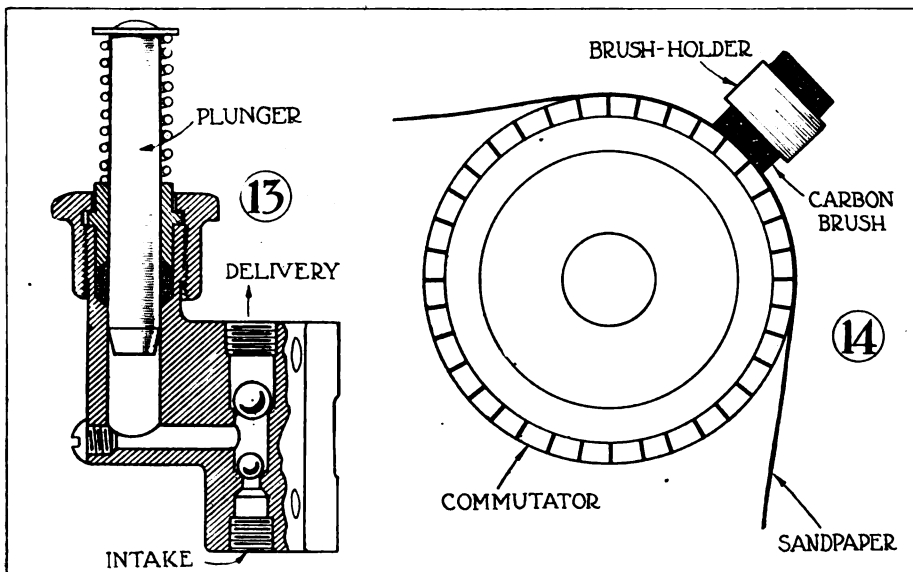


Fig. 13—Section showing the sturdy construction of the fuel pump, which is of the plunger type with ball valves. Fig. 14—How a new carbon brush may be made to fit the commutator by inserting a piece of fine sandpaper between the commutator and the brush surface

from the machine unless absolutely necessary because they wear to a good fit and remain in better condition if not disturbed.

If necessary to clean the commutator use very fine worn-out sandpaper; never use emery in any form. The new brushes can be sanded in by wrapping a strip of sandpaper around the commutator and pressing the brush against it as it is moved back and forth. This will grind it to the approximate curvature of the commutator. (See Fig. 14.)

### The Battery

The storage battery regularly furnished is a Willard PA. There are three models of the plants, and these differ only in the capacity of the battery. All the batteries have a voltage of 32 and consist of 16 cells each. The difference in capacity is obtained by using different size plates in the cells.

The battery must be located in some place where it is easy to add water to the cells and test the electrolyte with a hydrometer occasionally. It must be kept out of water, oil and dirt, and nothing should be laid on top of it. The electrolyte will freeze at low temperatures when fully discharged, but when fully charged will not freeze at any temperature experienced in any part of the United States. In winter, therefore, it must be kept charged to play safe.

The following maintenance hints will help keep the battery in good working order:

1—Keep terminals and connections coated with vaseline.

### Capacity and Charging Rate of the Batteries

Capacity in 32-volt, 20-watt lamps.	Outfit No.		
For 8 hrs.....	5	7	9
For 5 hrs.....	10	16	23
For 3 hrs.....	14	22	31
For 3 hrs.....	20	32	43
Capacity in ampere hrs.			
At 8-hr. rate.....	53	80	107
At 5-hr. rate.....	46	70	94
At 3-hr. rate.....	40	60	80
Normal charging rate.			
Start .....	7	10	12
Finish .....	4	5	8

2—Wipe up spilled solution with waste wet with ammonia.

3—Keep electrolyte level  $\frac{3}{4}$  in. above the plates by adding water.

4—Plugs must be removed to add the water, then replaced and screwed down.

5—Inspect battery and fill once a week in warm weather and once in two weeks in cold weather.

6—Fill with pure water only, not acid or electrolyte.

7—Use distilled water, melted artificial ice or fresh, clean rain water only. Do not use water containing salts, iron or any other chemicals. Water that has run through iron pipes will contain iron.

8—The condition of the battery should be tested by ascertaining the specific gravity of the electrolyte in each cell. This must be done before adding water. To take the reading, insert the end of the rubber tube on the hydrometer in the cell through the opening from which the plug has been removed. Squeeze it and then slowly release the bulb, drawing up the electrolyte until the hydrom-

eter floats. The reading on the graduated stem of the hydrometer at the point where it emerges from the solution is the specific gravity of the electrolyte. After testing the electrolyte must be returned to the cell from which it was drawn.

More than 1200 deg. indicates the battery is more than half charged; 1175 to 1200 deg. indicates the battery is less than half charged; below 1175 deg. indicates that the battery is completely run down or discharged.

A run-down battery is always the result of lack of charging or waste of current. If, after having been charged, the battery soon runs down again, there is trouble somewhere in the system which should be located and corrected. Putting acid or electrolyte into the cells can do no good and may do great harm.

If the gravity on any one cell is considerably lower than the others, this would indicate that the jar of this cell leaks. If there is no leak there may be a partial short circuit or trouble within the cell. This should be attended to at once.

9—A battery charge is complete when, with the charging current flowing at the finish rate given in the tables, all cells are gassing or bubbling freely and evenly and the gravity of all the cells has shown no rise during 1 hr. The gravity of the solution in the cells fully charged as above should be between 1225 and 1230 deg.

10—A battery which is to stand idle should first be fully charged, and it should receive a freshening charge at least once a month.

## Kewanee Farm Lighting and Power Plants

THE Kewanee Private Utilities Co., Kewanee, Ill., is making farm lighting plants in 28 different types and sizes at prices from \$450 for the smallest to \$1,330 for the largest. The complete plants comprise engine, battery, switchboard and generator, the generator being driven by belt.

The engine is of comparatively slow speed, its normal speed being 500 r.p.m. Water cooling is employed, and the engine can be furnished with either a hopper-cooled cylinder or with a closed-type cylinder using a thermo-syphon tank circulation. The fuel is fed to the carbureter by pump from an outside tank, and as the subbase of the engine is heavy cast iron, no special concrete foundation is required. The two large flywheels are counterbalanced, and the current for ignition is taken from the storage battery.

The generator is shunt wound, is mounted on a sliding base so that the tension of the driving belt can be regulated, and the pulley of the generator is flanged to prevent the belt from coming off.

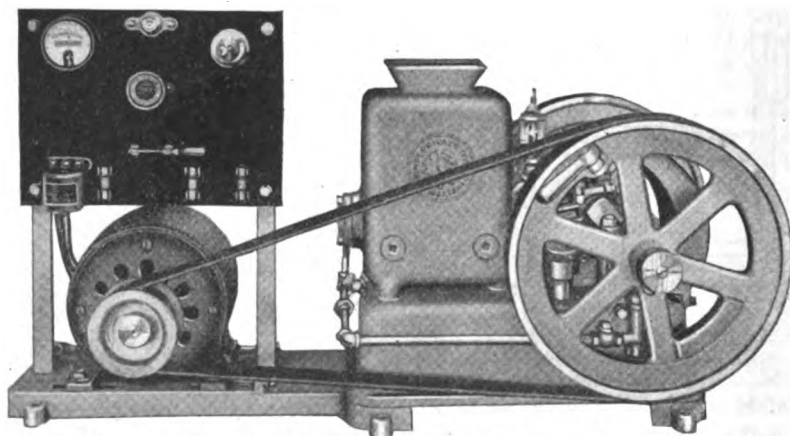
Option of either lead or Edison batteries is allowed. If of the lead type, the

cells are sealed glass jars. The Edison batteries are in enameled steel jars.

The switchboard is equipped with a field rheostat to regulate the charging rate of the batteries, and an ammeter to indicate the charge and discharge of the batteries; starting and stopping switch to control the engine, and an automatic circuit breaker to disconnect the gen-

erator and batteries when the engine stops.

Combined electric light and power plants and power pumps are built, the engine furnishing the power for both the pump and the generator. In these plants, the engine is direct connected to the pump, and the generator is driven by belt as in the other outfits.



The Kewanee farm lighting and power plant is made up of engine, battery, switchboard and generator



# Trucks—\$2.50 an Hour

**T**HERE are a dozen or more ideas in this article that will help sell more trucks. Israel used to rent horse-drawn vehicles and he hesitated to buy motor trucks because he didn't know just how to charge for their service. The truck salesman studied out the problem with the result that Israel got rid of his horses. The article will help you, too.—Editor.

**T**RUCK salesmen may sometimes so scatter their ammunition—suggesting various ways in which a truck may be useful—that they fail to make a deep enough impression to get the name on the dotted line.

Take the case of a transfer man using horses, who is being solicited to buy trucks. Obviously there are many uses to which the trucks may be put; but their chief use doubtless will be to do the same work that the horses have been doing; and in the same way.

The salesman is up against it unless he has studied the transfer business in the community where he is trying to make the sale—and knows whether trucks can be successful in following the lines of team trucking. And the salesman will become merely the order-bearer, if he lets the prospect argue the whole case out for himself.

Here's an instance from Kansas City that shows why the truck salesman can often profitably concentrate on one reason for the prospect buying trucks—being careful that he selects the right reason:

## Long in Transfer Business

Charles Israel had been doing a transfer business with horses for 20 years. He had always done just one kind of transfer business—he maintained teams and wagons, which he rented, with drivers, by the month to customers.

Israel never did any odd jobs; never answered a call on the telephone to come and get a trunk, or a load of furniture, or a shipment of groceries. He had 60 horses, all, either in teams or singly, hauling for customers by the month. The wagons had the customers' names painted on their sides.

Israel built up his trade because he knew just what the costs and hazards of running wagons were; he received enough for the service to help him carry a slight excess of equipment to guard against contingencies, and to give him a good profit.

The business was safe, because the firms under contract always paid promptly, and he knew he was going to get a

definite revenue from every team and wagon every month. The revenue was of course based on the specific service rendered, the larger wagons earning more than the small ones.

Now, it might look simple enough to show Mr. Israel that trucks could perform the service far better than wagons, and that prices could be made to the customers that would be satisfactory to them, and profitable to Mr. Israel. It would be dead easy to switch from horses to trucks, and continue the mode of doing business.

## Feed Was Getting High

Mr. Israel was ready to buy trucks, too—feed was getting exorbitantly high, and teamsters scarce.

There was just one little reason against substituting trucks for horses in the firm's service:

The patrons of Mr. Israel were buying their own trucks.

The day of leasing teams and wagons seemed to have passed, and it was a question whether motor trucks could be leased under the same system—whether it would be best for the user, more profitable for the transfer man.

Mr. Israel had solved this problem to his own satisfaction—and fortunately the salesman was able to get his conception of the situation, before going far in his efforts to sell trucks. The Israel business is run on an entirely different plan than formerly—but still it is a one-system establishment. This system is "\$2.50 an hour."

The trucks—as in the case of the horse-drawn vehicles—are practically the property of the customer while in his service, the driver under the customer's control. But the charge is by the hour, instead of by the day; and no contracts are made for use further than from day to day, or hour to hour. It frequently happens that a customer will use a truck day after day. In fact, one of the trucks is now used by one customer every week-day—but he pays \$2.50 an hour.

There are two hang-overs from the old system; a printer who formerly hired a team by the month, and is now paying

by the month for a truck. But this customer has one truck of his own, and is said to be negotiating the purchase of another. Mr. Isreal is accommodating him temporarily. The Kansas City post-office is also using one small truck, paying by the month—a personal temporary favor to the postmaster, who has had difficulty making a contract for one feature of mail hauling.

Here is what Mr. Isreal says—perhaps a useful thought for truck salesmen to keep in mind:

"A transfer man cannot do justice to two or three kinds of service; they are sure to conflict. I always have the same basis of charge for city work, \$2.50 an hour—and so never have any discussions as to whether the customer would be better off to take a tonnage charge or pay by the job.

"I never do small-lot hauling. Many calls come into my office for hauling trunks, for instance, and similar items; I take the order, if I know the caller, and turn it over to one of the men doing that kind of business, who runs a small truck.

## Every Truck Always Busy

"Consequently, my trucks are never out on small orders, when orders come in that will bring \$2.50 an hour. Even the ton trucks, which I let out at \$2 an hour, are always busy at this rate, frequently far into the night."

The Israel single-service system results in a maximum use of the trucks by the customers—which he charges for, and which he is eager for the customer to receive. There is a minimum of waiting on loads, and usually the trucks are loaded fully.

While Mr. Isreal calls his a "one-system" business, there has necessarily developed a slight variation. Wholesalers want loads taken to the country occasionally, and return loads must be provided for. Outside the Greater Kansas City district the charge for hauling is \$1 a mile. But the system is consistently maintained, in that the truck is "leased" with driver for a specific charge, by time or mile, on a particular order.

The editor of this department is glad to answer questions. In sending queries, always include copies of contracts, notes, etc., to which you refer.

# THE LAW

By George F. Kaiser

As It Applies to  
Dealers  
Repairmen  
Garagemen

## Lien Laws of All States

**D**URING the past year there has been only one change in garagemen's lien laws in the various states. Maryland by Chapter 465 of the Laws of 1918 provides for a statutory garagemen's lien. New York again failed to pass an improved lien law which would give garagemen, etc., the right to recover possession of a car on which they have a lien after it has gone out of their possession. By glancing over the following pages it can readily be seen that the states having a statutory garagemen's lien law are still in the minority. What is the matter with the garagemen and dealers in these states?

### ALABAMA

Mechanics who contribute labor and materials toward the repair and improvement of vehicles have liens for their charges, which liens must be enforced by attachment within 6 months after the last item of material is furnished or the last item of labor is performed. Section 4785, Code of Alabama, 1907.

### ALASKA

Persons who bestow labor on an article of personal property at the request of the owner have a lien upon the property on which the labor was bestowed and may retain possession of such property until their charges are paid and sell it at public auction if their charges are not paid within 30 days, provided, however, that 30 days' notice is given before the sale. The claim must be filed within 60 days after the completion of the work. Laws 1915, Chapter 5.

### ARIZONA

Mechanics and artisans have liens for the amount of their charges for work done on personal property, but this lien expires in 6 months, unless suit is instituted. Section 3673, Chapter 6, Revised Statutes.

### ARKANSAS

This State has no specific garageman's lien law, but has a provision that mechanics, blacksmiths, wheelwrights and material men have liens for labor and materials furnished in repairing vehicles. The Supreme Court held, in the case of *Sheldon vs. Little Rock Auto Co.*, 146 S. W., page 129, March 25, 1912, that a garageman is a wheelwright under this provision of law and has a lien for labor performed by him and materials furnished in repairing a motor car. He must file an itemized statement of his account with the justice of the township where the debtor resides or where the property on which the lien is claimed is located, which description must be verified by affidavit. Kirby's Digest, Sections 5013, 5016.

### CALIFORNIA

Every person who, while lawfully in possession of an article of personal property, renders any service to the owner thereof by labor or skill employed for the protection, improvement and safe-keeping or carriage thereof, has a special lien thereon, dependent on possession for the compensation, if any, which is due to him from the owner for such services; the person who makes, alters or repairs any article of personal property at the request of the owner or legal possessor of the property has a lien on it for his reasonable charges for the balance due for such work done and materials furnished and may retain possession of the property until the charges are paid . . . and garagemen shall have a lien, dependent on possession, for their compensation in caring for and

safe-keeping motor cars. Section 3051, page 1010, Supplement to Notes and General Laws of California, entitled "Liens on Personal Property for Services Thereon."

### COLORADO

Mechanics have liens upon articles of personal property when these are made, altered or repaired at the request of the owner.

### CONNECTICUT

Garagemen and repairmen seem to have no liens in this State for storage, repairs, etc.

### DISTRICT OF COLUMBIA

Any mechanic or artisan who makes, alters or repairs any article of personal property has a lien thereon for work done or materials furnished and may retain such article until his charges are paid. If they are not paid within 6 months he may sell such property at public auction.

### FLORIDA

Any person has a lien on personal property when he performs any labor upon or with any engine, machine, apparatus, fixture or implement, or upon such engine, machine, apparatus, fixture or implement, and for manufacturing, repairing and altering articles or things of value. Suit must be brought on claims of this kind within 12 months from completion of the work or the furnishing of the last item of material.

### GEORGIA

This State has no specific statutory garageman's lien law, but mechanics have liens on personal property upon which they have worked. In the case of *Boughman Automobile Co. vs. Emanuel*, 73 S. E. 511, Jan. 10, 1912, a garagemen's right to a "mechanic's lien" for labor performed and materials furnished in repairing a motor car was recognized.

### IDAHO

Persons making, altering or repairing an article of personal property at the request of the owner have a lien for reasonable charges and may retain possession of the property. If the charges are not paid within 2 months, the garageman may sell the property at public auction on 10 days' notice after advertising in a newspaper in the county where the work was done or posting a notice in three of the most public places, if no newspaper is published there.

### ILLINOIS

Garagemen shall have a lien for proper charges due for repair materials and expenses incurred at the request of car or truck owners when motor vehicles, parts or accessories are sold on a conditional bill of sale, and the seller remains unpaid, if the conditional sale contract has been filed in the recorder's office in the county where

the sale took place before the lien attaches.

### INDIANA

Every person, firm or corporation or others engaged in storing or furnishing supplies for or repairing automobiles, motor trucks or motorcycles shall have a lien for storage charges for furnishing supplies and for repairing.

Within 60 days after the charges become due, notice of intention to hold a lien must be filed in the recorder's office of the county where the work was done. This notice must contain the amount of the claim and give a description of the vehicle. Liens may be foreclosed in the Circuit Court of the county where the work is done by filing a complaint within 1 year of the owner's refusal to pay the charges due. Attorney's fees are allowed the dealer when action is brought to enforce the lien. Chap. 167, Acts of 1915.

### IOWA

Persons having personal property in their possession to which they have imparted additional value by their labor have a lien for their charges thereon where there is no special contract for such lien.

### KANSAS

A first and prior lien is hereby created in favor of any blacksmith, horseshoer, wagonmaker, garageman or any other person upon any goods, chattels, or other vehicles or automobiles and any farm implements of whatsoever kind, which shall have come into the possession of such blacksmith, horseshoer, wagonmaker, garageman or any other person for the purpose of having work on said property, or repairs, or improvements in anywise appertaining thereto. The lien shall amount to the full amount and reasonable value of the services performed, and shall extend to and include the reasonable value of all material used in the performance of such services.

### KENTUCKY

There seems to be only a common law lien in this State.

### LOUISIANA

All owners, operators, or other persons operating a garage, or other place where automobiles, or other machinery are repaired, shall have a lien or privilege on the automobile or other machinery repaired, for the repairs and labor performed on the same; provided, that the privilege herein granted shall not exist for a longer period of time than 90 days after said repairs are made, and, provided further, that this privilege shall have no effect against bona fide purchasers of said machinery, without previous notice.

### MAINE

Persons have a lien for labor expended in the improvement of personal property.

At a recent session of the legislature an act was passed which provided that whoever puts a motor car in a public garage or other place where cars are stored for hire, and without having an express agreement for storage, procures accessories or accommodation for himself or said car, and with intent to defraud the owner or keeper of said garage, removes or causes to be removed any such car from such garage without paying the reasonable charges due for repairs, supplies, accessories or accommodation furnished thereon, shall be punishable by imprisonment not exceeding 3 months or by a fine not exceeding \$100. In order for the owner or keeper of such a garage to obtain the benefits of this act, a printed copy must be posted up in some conspicuous place in the garage. Chapter 214, Laws of 1913, Maine.

#### MARYLAND

Garages.—When motor vehicle is left with owner's consent for storage, furnishing of accessories or tires, dealer has lien and may retain possession until paid. Lien is superior to conditional bill of sale, bills of sale, chattel mortgages and other liens not executed and recorded, but inferior when properly executed and recorded. Surrender of motor vehicle means loss of lien as against third persons, but not as against owner. In case of dispute lien to continue until final decision is rendered by Court. Chapter 403, Laws of 1918.

(Washington County.) Motor vehicle is left for storage, alterations or repairs, or for furnishing of parts, accessories, tires, gasoline, oil, electric current, towage or other material or service, dealer, etc., has lien and may retain possession until paid. Superior to unrecorded bills of sales and chattel mortgages, etc., but inferior to recorded ones. Surrender of vehicle extinguishes lien as against third persons, but not as against owner. In case of dispute lien to remain until final decision of Court. Owner may get possession upon paying what is admitted to be due and giving bond for balance.

Procuring any of above or fraudulently removing car is punishable by fine not more than \$100, imprisonment for not more than 6 months or both. Removal of car without knowledge of proprietor or manager is prima facie evidence of fraud. Chapter 465, Laws of 1918.

#### MASSACHUSETTS

Persons maintaining public garages for the storage and care of motor cars and other motor vehicles which are brought to their premises or placed in their care by or with the consent of the owners thereof, shall have a lien upon such motor cars for proper charges due them for storage and care. Chapter 300, Acts of 1913 of Massachusetts, being entitled "An Act Relative to Liens by Persons Maintaining Public Garages."

#### MICHIGAN

All garagemen who furnish labor, gasoline or supplies by express or implied contract have a lien on all motor cars, etc., stored, maintained and supplied or repaired or furnished with gasoline, electric current and accessories when these things have been furnished at the request or with the consent of the owner. The vehicle may be detained at any time within 90 days after the last item of work was done or the last item of material was furnished. Dealers may advertise if they are not paid within 90 days after serving a claim of a lien and an itemized statement of the account and can then sell the property like at a chattel mortgage sale. Dealers must comply with all the laws of State, cities, towns, etc., to avail themselves of this lien law. Michigan, 1915, Law.

#### MINNESOTA

Persons altering, repairing or bestowing labor on any article of personal property at the request of the owner or legal possessor have a lien for their just and reasonable charges. If they are not paid within 90 days, they may sell the property at auction on giving notice. They also have a lien for storage.

#### MISSISSIPPI

Garagemen have a lien for labor performed and materials furnished in repairing motor cars under Code of 1906, Section 3075, and may retain the property in their possession and sell it. This right is superior to that of a person who sells a car on a conditional bill of sale and retains the title. Decided in *J. A. Broom & Sons vs. S. S. Dale & Sons*, 67 Southern 659, March 15, 1915.

#### MISSOURI

There is a common law lien on chattels which have been improved by the labor of a mechanic if they are retained in his possession.

#### MONTANA

Every person while lawfully in possession of an article of personal property rendering service to the owner by labor or skill employed in the making, repairing, protection, improvement, safekeeping or carriage thereof has a special lien dependent on possession for compensation due. Mont. Code 5005.

#### NEBRASKA

Any person who makes, alters or repairs, or in any way enhances the value of any vehicle . . . at the request of or with the consent of the owner, shall have a lien on such vehicle . . . while in his possession for a reasonable or agreed charge for the work done or materials furnished; and shall have the right to retain said property until said charges are paid. If possession of the property is parted with, the lien may be retained if a certificate is filed in the office of the clerk of the county where the work was done or the material was furnished, or the property was kept, together with a verified statement of the items of work, etc., and a description of the article repaired . . . within 60 days after the last item was performed. Chapter 39, Revised Statutes of Nebraska, 1913, paragraphs 38-41, Section 19, entitled "Artisans' Liens."

#### NEVADA

All garagemen, repairshops or places for buying and selling automobiles have a lien upon motor vehicles for the sums due for storing, maintaining, keeping or repairing them or for labor furnished thereon or for furnishing accessories or supplies therefor, and may detain the car or truck until the charges are paid. This lien is not lost by allowing a motor vehicle to be removed, as the person having the lien may seize the car or truck wherever it may be found without the State of Nevada. This lien is secondary to conditional bills of sale, leases and mortgages. Action to enforce the lien must be brought within 20 days. Where a motor vehicle is sold, the lien terminates unless the buyer is notified within 40 days from the date of sale. Incurring a bill upon a motor vehicle without the authority of the owner or by misrepresentation is a misdemeanor, punishable by a fine of not more than \$100 or 30 days in the county jail, or both. Chap. 213, Laws of 1917.

#### NEW HAMPSHIRE

There is a common law lien when a person has lawful possession of personal property for any expenditure made by him or labor performed at the request of the owner.

#### NEW JERSEY

Garagemen, repairmen, etc., may detain vehicles in their possession against which they have charges for storage, repairs, gasoline, accessories, etc., until they are paid. The lien is not lost if motor cars are removed from their possession, and they may be seized wherever they may be found in any part of New Jersey.

Detained cars may be sold at public auction after 30 days if the sale is first advertised in a paper in the city or town where the garage or repairshop is located, and 5 days' notice is set up in five of the most public places. Chapter 312, Laws of 1915, New Jersey, entitled "An Act for the Better Protection of Garage Keepers and Automobile Repairmen."

#### NEW MEXICO

Persons who store, maintain, keep or repair motor vehicles or furnish gasoline, oil, lubricants, accessories or other supplies have a lien for their charges and may detain the motor vehicle until the sum due is paid. This lien is not lost by allowing the property to be removed. To sell the property suit must be instituted and judgment recovered, after which it may be sold on execution. Notice of the claim showing the amount of indebtedness and for what it is due should be served on the owner and if the charges are not paid within 10 days the property may be sold. The sale must be advertised and the property sold at public auction after 20 days' notice. The proceeds of the sale after the lien charges and expenses have been paid are to be refunded to the owner. Chap. 65, Laws of 1917.

#### NEW YORK

Garagemen have a lien on motor cars for storage, repairs, gasoline and other sup-

plies furnished with the consent of the owner whether a conditional vendee or a mortgagor in possession, and may detain the property if in their possession until their charges are paid. Section 184, Lien Law, Consolidated Laws of New York.

#### NORTH CAROLINA

Mechanics, etc., have a lien on articles of personal property which they repair or alter. This lien must be filed within 12 months after the completion of the work. Six months additional are allowed to institute an action to enforce the lien.

#### NORTH DAKOTA

Mechanics have liens for the amount of their charges for labor performed upon articles of personal property.

#### OKLAHOMA

Blacksmiths, wheelwrights, horseshoers, etc., have liens for work done or articles repaired.

#### OREGON

Every automobile repairer who has expended labor, skill and material on any chattel at the request of the owner has a lien for the contract price notwithstanding possession has been surrendered to the owner. 164, P. 714.

#### PENNSYLVANIA

Mechanics have a common law right to a lien for labor performed by them. There is an act in this State entitled "For the Protection of Keepers of Garages or Automobile Shops," providing that every person who shall place in any garage or repairshop any automobile for storage, repairing or garage service, and shall surreptitiously remove the automobile or cause it to be removed by any false pretense or device with intent to defraud, shall be adjudged guilty of a misdemeanor and, upon conviction, shall be sentenced to a fine of not more than \$100 or imprisonment in the county jail for a term not exceeding 3 months, either or both, at the discretion of the court. L. 1913, No. 277.

#### RHODE ISLAND

Mechanics are entitled to liens upon articles for labor performed and expenses bestowed at the request of another.

#### SOUTH CAROLINA

Mechanics have liens upon articles of personal property when they have bestowed labor upon the same.

#### SOUTH DAKOTA

Mechanics have liens upon articles of personal property for labor performed on the same.

#### TENNESSEE

Garagemen, etc., have a common law lien on property repaired by them if they retain possession of it. Under Acts of 1909, Chapter 150, providing that there shall be a lien upon any vehicle . . . for any repairs or improvements made or fixtures or machinery furnished at the request of the owner or his agent, in favor of a mechanic, contractor, funder or machinist who undertakes the work. A mechanic has a lien for repairs for labor performed and materials furnished in repairing an automobile. *Shaw vs. Webb*, 174 S. W. 273, Supreme Court of Tennessee, March 6, 1915.

#### TEXAS

Although there is no special provision for a garageman's lien in this State, mechanics, artisans, etc., have a lien for any articles created in whole or in part by their services and for labor performed upon the same. Under Article 5665 R. S., 1911, there is a special provision for liens for work on vehicles. It has been held that though a garageman may avail himself of the lien given under these statutes, he loses the lien by giving up possession of the property. *Malcolm vs. Simms*, 164 S. W. 324; *Caldwell vs. Supply Company*, 158 S. W. 1031; *Ford vs. Freeman*, 168 S. W. 80.

#### UTAH

Any person bestowing labor on personal property at the request of the owner has a lien for his labor and for materials furnished in connection therewith. In the case of *Westminster vs. McCurtain*, 118 R. C. 564, Sept. 27, 1911, it was held that a garageman was included and had a lien for his services in repairing an automobile.

(Continued on page 37)

# Repairshop Shortcuts

*From Motor World Mechanics*

## No. 1510—TESTING TUBES FOR LEAKS

Tubes can be tested for leaks in water without getting the hands in water by using a forked handle. A piece of  $\frac{1}{4}$ -in. drill rod 60 in. long is cut in half and the ends twisted together to form a handle. This will make a Y-shaped tool, and the tube is held under water by placing it under the branches of the Y.—I. Alexander, Edward L. Thoman Tire Repairshop, Trenton, N. J.

## No. 1511—VISE JAW FOR BOLTS

An auxiliary vise jaw to hold bolts or other cylindrical objects is made from  $\frac{1}{4}$ -in. square stock bent into the form shown and the molds to hold the objects cut half out of each side. The handle or circular part is made lower than the jaw so that the file will not touch it.—John W. Roetzel, Haspers, Ia.

## No. 1512—REMOVING A VALVE CORE

A triangular file is used to remove a broken valve core, the point of the file being ground on an emery wheel till the corners are sharp. The sharpened point is then driven into the opening in the core, the valve being held in a vise. A wrench is then put on the upper part of the file and the core unscrewed.—G. Mark Piper, Bloomington, Ill.

## No. 1513—SPEED-WRENCH AUXILIARY

An auxiliary device for assisting one man working with a speed wrench consists of a holder which can be operated by the foot of the mechanic. The one shown is especially for the crankcase nuts of a Ford and consists of a  $\frac{3}{8}$ -in. bolt socket wrench, the T-end of which fits into the bushing of a spring leaf which is laid on the floor. This is easily held in place with the foot and keeps the bolt from turning while removing the nut from the top.—Oscar Carlson, Oscar Carlson & Son Garage, Dannebrog, Neb.

## Make a Dollar

*HOW often have you been compelled to rack your brain to overcome some difficulty? But when you did find a solution—what satisfaction it was! Well, here's a chance for you to dig some of those life-savers out of their hiding places and put them to work for your fellow-craftsmen. Send them to Motor World. We will pay you a dollar for every one accepted for publication.*

*The only requirements are these:*

*1—Describe the shortcut briefly but clearly, in few words.*

*2—Send a sketch, in pencil or pen, no matter how rough; our artists will finish the job.*

*3—Write on ONE side of the paper only.*

*4—Sign your name and initials, the name of the company you are with, and the town.*

*Write plainly. If your name is unusual, print it in capital letters.*

## No. 1514—STRAIGHTENING FINS ON A FORD RADIATOR

Bent fins on a Ford radiator can be straightened by using a tool made from three hack-saw blades. These blades are about 8 in. long and are forced into a slot in a wooden handle, the middle blade being set back  $\frac{1}{4}$  in. This leaves a slit between the outside blades into which the fins of the radiator are slipped and bent straight by means of the handle.—E. C. Greenough, Greenough's Radiator Works, Omaha, Neb.

## No. 1515—REPLACING VALVE PINS ON A DODGE

Valve pins are easily replaced on a Dodge Bros. car by using a piece of 5/16-in. cold rolled rod with a 3/16-in. hole drilled in one end to a depth of  $\frac{1}{4}$  in. This rod is bent or offset 5/16 in. from a straight line at one end. The pins are placed in the hole and then inserted in the valve stems.—W. C. Byrd, Freeland Motor Co., Henderson, N. C.

## No. 1516—TIRE GAGE HOLDER

A holder for a tire gage is made from strap iron or brass of such a shape that it clamps both the gage and the connection on the end of the air hose. Two machine screws or cap screws with nuts are inserted in holes in the strap and these hold the device securely. The air can be slipped off and the gage slipped on with one hand and with little loss of time.—Oscar Carlson, Oscar Carlson & Son Garage, Dannebrog, Neb.

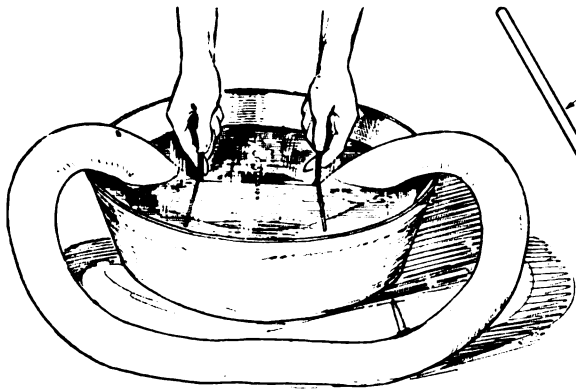
## No. 1517—JIG TO HOLD METAL FLOATS

A jig for holding metal carburetor floats is made from a piece of cold-rolled steel rod which is threaded and is provided with a nut. A piece of rod 4 in. long and  $\frac{3}{8}$  in. diameter is threaded at one end to take the adjusting nut and near the other end is a pin to hold a  $\frac{3}{8}$ -in. flat washer. Enough of the rod is left above the pin to enable it to be held in the chuck of a lathe or drill press. A rubber washer is placed at each end under the metal washer to protect the float.—Charles A. Knause, Hamburg, Pa.

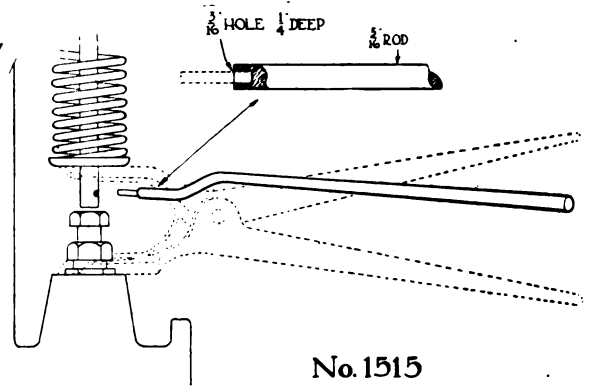
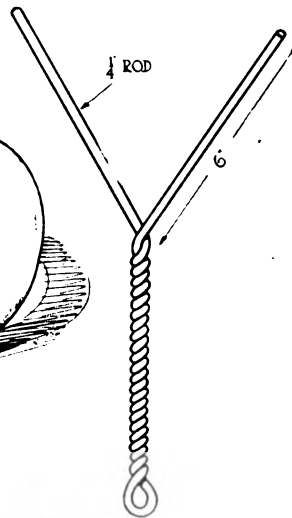
## No. 1518—SPEED WRENCH FOR REAR AXLE HOUSINGS

A speed wrench for the rear axle housing of the Ford or Chevrolet is made from a piece of bar stock bent as shown and fitted at one end with a 5/16-in. bolt socket which is held stationary. The other end of the bar is welded to a piece of pipe through which the movable member goes. One end of this movable member is shaped like a crank and the other is fitted with another 5/16-in. bolt socket.—Oscar Carlson, Oscar Carlson & Son Garage, Dannebrog, Neb.

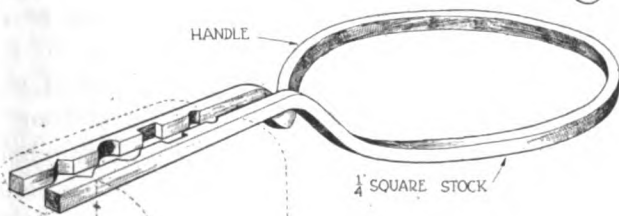




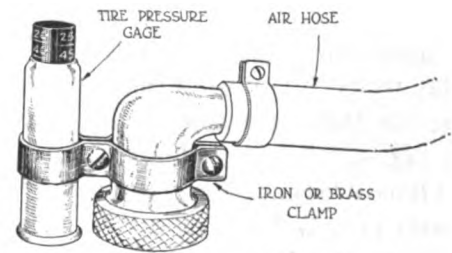
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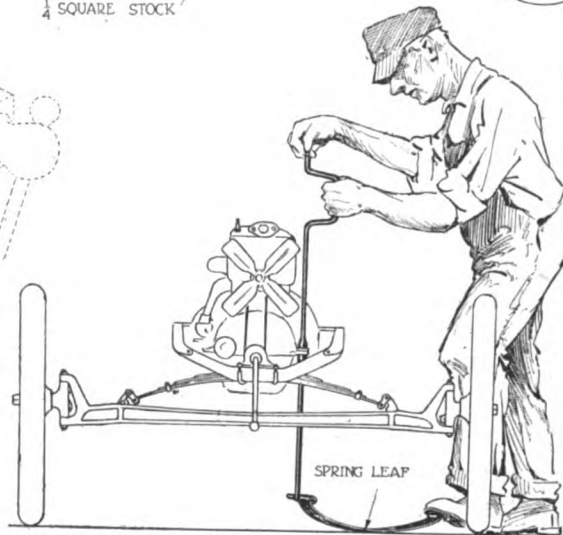
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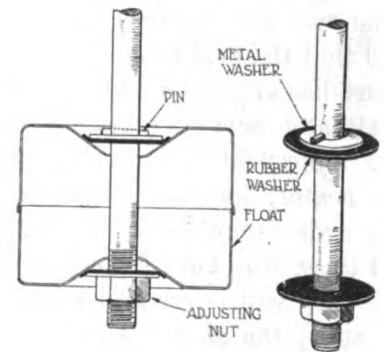
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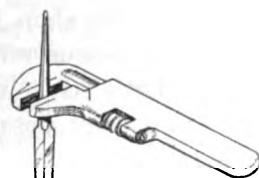
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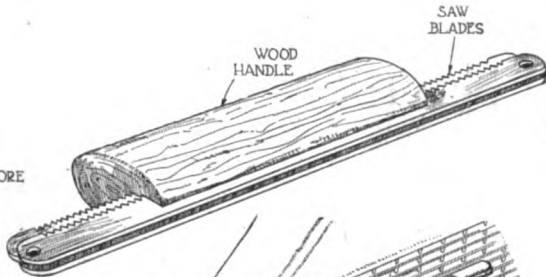
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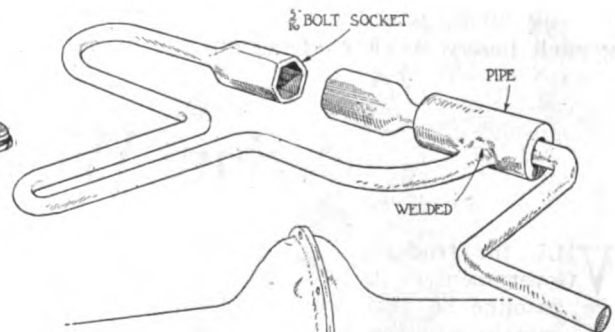
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THREE CORNERED FILE



No.1514



No.1518

No.1512

# Editorial Observation

## Hire More Women

**W**OMEN are being employed by garages and service stations in increasing numbers and according to reports which are being received from day to day their work is proving entirely satisfactory. In this respect, the substitution of men for women but parallels the efforts of manufacturers in various lines who have been hard put to it to find sufficient male help to keep their establishments operating at the proper schedule.

And when we look at this problem with our eyes wide open, it is hard to find any reason why women should not prove entirely satisfactory for many of the jobs that the dealer, garageman and repairman heretofore has employed men.

Already several garages employ women washers. This field logically belongs to women. Women are neater, have a greater respect for cleanliness and order than have men; the work is not hard, and those who have employed women washers report that they will never go back to men for this work.

Lately, the shortage of male help has become so acute in certain sections that women are being employed for mechanical jobs such as no one ever thought a woman could do before the war. But war has changed everything and now we see women doing such heavy work even as changing engines and

axles; while such light jobs as grinding valves, making ordinary adjustments on carbureters, ignition, fan belts, etc.—which jobs, by the way might as well be done by the owner himself—are quite as easily, quickly and efficiently done by women as by men.

Let's give the women more of this kind of work to do. The men are needed for other, sterner work. In some of the larger establishments throughout the country there are dozens of men employed on jobs that might as well be done by women.

Why shouldn't we have women stock clerks, women claim clerks, women tool room clerks, women time clerks, women helpers and messengers, women elevator operators, women sales persons in our accessory stores?

This is work just as easy—and just as important, too—as stenography and typewriting and bookkeeping.

But don't let's be carried away by an excess of enthusiasm and fire every man in the shop just for the sake of hiring women. Let's look around, take stock of our help, so to speak. Let's see if we can't put the men on jobs that women can't possibly do, and fill up the gaps with women.

Let's see if we can't promote that man washer into a mechanic and give him a chance to earn more.

## Sure We'll Save Gasoline

**W**ILL the trade get behind the Government in its effort to save more gasoline so that we may the more quickly win the war? To be sure it will.

It goes without saying that the motorist will be glad to accede to the request of the Government that no gasoline be used on Sundays except for strictly business purposes.

We have pledged ourselves for the Liberty Loans, and for the Y. M. C. A. and the Knights of Columbus and Thrift Stamps, and now we are going to pledge ourselves to help win the

war by giving up our Sunday rides for a few weeks.

We are going to do this freely and willingly; we are not going to grumble about it because it is just such sacrifices as this that we must make from time to time to keep Bloody Bill from further atrocities.

We are going to show the Government that it is not necessary for it to issue any such mandatory orders as are hinted at in the announcement requesting a curtailment in the use of cars.

It will be for only a few Sundays—

four or five, according to those who have made the closest study of the situation. Then we will have saved enough gasoline to make certain of the greatly increased supply that must be devoted to the stern business of winning the war.

Just a word as to what the dealers and garagemen can do to help. Tell your customers that since the first of the year the production of gasoline has increased 27 per cent but that the demand has increased 29 per cent.

Let's all be cheerful about the saving—for we surely are going to save.

## Letters from Readers

*THIS page is for the use of MOTOR WORLD readers with something to say. Letters on subjects of interest to dealers, garagemen, repairmen and jobbers are always welcome.—EDITOR.*

### Display and Advertise the Stock

Editor Motor World: It seems to the writer that in view of the small number of different size tires which will be effective by November, 1920, two short years, that the average small-town garage and accessory dealer will have severe competition.

Every department store will probably have a line of tires, as the investment to carry a complete line will be comparatively small.

What, in your opinion, is the best way for a dealer to get ready for this change? —J. E. Nugent, Sloan & Clapper, Inc., Newburgh, N. Y.

Answer—The best way to meet competition of mail order houses, department stores, hardware stores or any other similar lines which are competing with the dealer and garageman is for the dealer and garageman to display his stock, advertise it well and keep in close touch with his customers.

These methods have been found successful in meeting mail order houses in several towns of which we know, the stories of which have been printed in Motor World during past years. There will always be, probably, more or less competition from sources outside the trade so long as the automotive equipment business maintains the proportion it has to-day, and, of course, it is going to be even larger.—EDITOR.

### A Letter From Italy

Editor Motor World: You will be surprised to hear from me here in Italy, because you may not know that some time ago I came down to the office one morning in Spokane (Brewer Motor Car Co.) and told the boys I was going to France. Well, I went and they sent me on here, so now I'm an Italian!

It appears that there have been very few automobile dealers go into the war work for the Y. M. C. A. and the need was great on account of the transportation problems. I was first selected to take charge of the Maintenance Department for all the cars and trucks in the Y service in France—some job that! At about the same time the Y work for the American soldiers began to open up in Italy and they asked me if I would come over here and take charge of the Transportation Department for Italy. I said, "Yes," and here I am—that's the whole story.

The Brewer Motor Car Co. is running full blast. Fred B. Huffman, former secretary, was elected president for the period during my absence. I still retain a very large interest in Spokane, and my thoughts are there much of the time, even if I have real work here.

I got to feeling that I OUGHT to get into this scrap and so I did, even if it did mean sacrifice, as it has for all others who have done likewise. Those who go are not the only ones who are sacrificing, and I appreciate the fact that I could not be here if it were not for business men at home who are still keeping the home fires burning and contributing at the same time to the Y. M. C. A., Red Cross, etc., and buying bonds.

Letters from the States are what I live on, now that I am away.

I wish I might get a copy of your Motor World here. Are there not two subscriptions going to the Brewer Motor Car Co., or one to the company and one to me at Spokane? If this be true send me one here, please. Let me know what I owe you for the additional postage. Write me when you send the first copy and we will see how long it takes to get through. Letters come much faster than papers. Letters take about one month.

Please address all correspondence to me, Care American Y. M. C. A., 12 Rue d'Aguesseau, Paris, France.—C. B. Brewer, Milan, Italy.

### "Pleasure Car"

Editor Motor World: The writer believes the one class of people, more than any other one class, in fact, even more than the public, who will need educating in the matter of "passenger car," in preference to "pleasure car" are the

representatives of commercial car manufacturers. We have these representatives in here at the rate of probably an average of ten a week, and nine out of every ten of them use "pleasure car." Two have already done so this morning.—E. V. Stratton Motors Co., Inc., E. V. Stratton, President.

### Ask McAdoo

I stepped into the office  
Of a railroad yesterday,  
To inquire about some autos;  
They've been long upon the way.  
Here's the answer that they gave me,  
And they'll give the same to you,  
"We don't know a thing about them—  
You ask McAdoo."

Well, that made me rather peevish,  
And more questions then I flung.  
For there seemed to be a million  
That came tripping from my tongue.  
But to each and every query  
I propounded, this is true,  
He replied, "I cannot answer—  
You ask McAdoo."

Then I sought to fire a killer  
And I asked in accents bold,  
"What's the matter with your railroad,  
Has the bloomin' thing been sold?"  
And he answered, all unfurried,  
As he winked his eye of blue,  
"Uncle Sam now runs the railroads—  
You write McAdoo."

—N. R. Cooper.



# The RETAIL NEWS

## EAST

**Metcalf & Berry**, 134 Church Street, Hartford, Conn., have taken on the Portage tire for Hartford and surrounding territory.

**The Electric Auto Station**, 412 Church Street, Hartford, Conn., has been given the agency for the U. S. L. battery.

**The Hartford Scripps-Booth Co.**, recently organized, has leased a store at 214 Pearl Street, Hartford, Conn.

**The Holcombe Repair Co.**, 715 Albany Ave., Hartford, Conn., has taken on the Federal tire for this part of the State.

**Maxwell and Chalmers** New York branches have just been consolidated with headquarters at the Maxwell salesrooms at 1808 Broadway, corner Fifty-ninth Street, under the management of Harry J. De Bear, who has been in charge of the Maxwell branch for the past four years.

## New Garages

H. Townsend (81 x 16 and 27 x 16 ft., \$3,000), Philadelphia  
 John H. Derr (addition, cost \$2,500), Philadelphia  
 Joseph A. Browne.....Philadelphia  
 The Atlantic Fuel Co.....Philadelphia  
 Dill & Collins (55 x 70 ft., \$18,000), Philadelphia  
 The Brinson Truck Co. (addition), Philadelphia

## MIDDLE WEST

**The Hurd Auto Sales Co.**, No. 2, Flint, located at 923 S. Saginaw Street, formerly the C. H. Lintz Co., is now under new management. Walter J. James, formerly sales manager for the Ford Sales Co., has been engaged to manage the Hurd company, No. 2. The company distributes the Dodge, Hudson and Paterson.

**Thomas J. Doyle**, Dodge distributor, Detroit, has opened his used car salesroom at 736 Woodward Avenue. The building, which formerly housed two motor car distributors and a garage, has been remodeled and made into one large showroom. In addition to the showroom proper an awning, 19 by 150, has been placed on the side of the building which will cover 75 cars. Manager S. E. Comstock will operate the business entirely separate from the Dodge distributing room on Woodward and Garfield Aves. The showroom proper has a floor space of 10,000 sq. ft.

**The Rupright Motor Co.**, Chicago, Ill., is to be known hereafter as the Columbia Motor Co., and the capital stock has been increased from \$1,000 to \$75,000.

**R. F. Schwartz and F. J. Walter**, Decatur, Ill., have formed a partnership to handle motor car accessories, the firm to be known as the Mutual Auto Supply Co. The firm will be located at the corner of Cerro Gordo and Water streets.

**The Indiana Motor Car Co.**, Chicago, Ill., is to be known hereafter as the Automotive Electric Service Corp., and will operate a truck service in Chicago and adjacent towns.

**M. K. Sablin**, Battle Creek, Mich., distributor for the Buick, has bought out the business of Frank Palmer, having taken a lease on the building occupied by him. This will enable him to double his garage facilities.

**The Universal Car & Service Co.**, Grand Rapids, Mich., has taken the distribution of the Dort throughout seventeen counties in western Michigan.

**John S. Lanigan**, Lincoln, Ill., has sold his garage to the Cadillac Sales Co., and will enter the Army.

**J. E. Ryal**, Peoria, Ill., has opened a new garage at the corner of Hamilton Boulevard and Jefferson Street. This is a three-story structure of brick, and is one of the largest in the city.

**Ray W. Lane**, Clinton, Ill., has closed his garage on East Adams Street, having entered the Army service.

## New Garages

Chester Dahl (80 x 120).....Racine, Wis.  
 Schlafer Hardware Co. (50 x 120), Appleton, Wis.  
 Farness Bros. (50 x 100).....Lodi, Wis.  
 W. F. Hagen Motor Co. (40 x 150), Manitowoc, Wis.

## PACIFIC COAST

**A. H. Patterson**, Stockton, Cal., who drove on the Hudson racing team, taking part in the record-breaking transcontinental trip of the Hudson car, has become a Liberty dealer.

**The West Coast Motor Co.**, Tacoma, Wash., distributors of Empire cars, have moved to their new location, 1728-30 Pacific Avenue.

**Atwood's Garage**, Grangeville, Idaho, was recently destroyed by fire, with a loss of \$6,000. T. M. Atwood is the owner.

**The Acme Auto Co.**, Portland, has been purchased by L. G. Railsback and T. T. Hiller, who will continue the business at 531 Alder Street. The concern will handle used cars.

**The Truck Attachment Co.**, 2012 Fifteenth Avenue, Seattle, plans to handle machinery work of all kinds, including blacksmithing and forging.

**L. C. McNairn**, Seattle, and **Fred Nowell**, Yakima, have opened a service station in Seattle for brakes, automobiles and motor trucks.

**Master Electric Co.**, Seattle, has secured the agency for the Permalife Storage Battery Co. for the State of Washington.

## New Garages

M. M. Haight (2-story mill construction, 120 x 111 ft., cost \$22,500)....Seattle  
 Hoffmeister Bros. (1-story brick, 50 x 70 ft.), Vancouver, B. C.  
 A. T. Peterson (fireproof brick).....Toledo, Ore.

## NORTHWEST

**R. O. McCune** has purchased the Paramount Motor Co., Fort Dodge, Iowa, from Arthur Birkland.

**The Service Tire Co.**, Fort Dodge, Iowa, has opened a shop and salesroom at 422 Central Avenue, and has taken the agency for the Miller and Hartford tires.

**The Manbeck Motor Sales Co.**, Des Moines, Iowa, has taken over the Newby Motor Co. interests and will cover 58 counties for Maxwell passenger cars and trucks in Iowa for the coming season.

**W. T. Bush**, Des Moines, Iowa, has opened a garage and machine shop at 526 East Walnut Street and has taken a contract to complete ten thousand valves for the Government this fall and winter.

**Murphy & Cohen**, Des Moines, Iowa, have opened a new garage and service station on the east side, to be called the Northwestern Garage.

**Eugene Wilson**, Winterset, Iowa, has bought the interest of his partner in the Wilson-Gentry Auto Co.

**The Holman Stevens Automobile Co.**, Des Moines, has changed its name to the Franklin Motor Co. of Des Moines. A. M. Brackett is president; H. N. Adamanson, vice-president, and Fred Stevens, secretary.

**J. D. Madison**, Kanawha, Iowa, has bought the Lein Garage.

**Ben and Carl Pautsch**, Denison, Iowa, have bought the Denison Auto Co.

**J. H. Harrison**, Oskaloosa, Iowa, has bought the controlling interest in the Hoover Auto Co.

**Carl Lewis**, Pocahontas, Iowa, has sold his garage to Alva Moorehead.

## New Garages

Hilts & Sweeney.....Clear Lake, Iowa  
 Collins Oil Co.....Shenandoah, Iowa  
 Collins Oil Co.....Red Oak, Iowa  
 Crigger & McBride.....Charlton, Iowa  
 A. R. Neal.....Adel, Iowa  
 Estes Brothers.....Davenport, Iowa

## CANADA

**Art Ross** has opened an equipment store in the shopping and theatrical district of Montreal.

## NEW TRUCK AND TRACTOR DEALERS

**The Tremain & Rankin Auto Co.**, Fort Dodge, has taken an agency for the Graham attachment for Dodge Brothers' cars.

**The Lyndall Motor Truck Co.**, 222 North Twenty-second Street, Philadelphia, has been appointed by the Chicago Pneumatic Tool Co. distributor for Giant (worm-drive) trucks in eastern Pennsylvania, Delaware and New Jersey.

**Hodson-Feenaughty Co.**, Portland, Ore., have been named distributors for Holt Caterpillar Tractors in Multnomah County.

**David A. Pepp**, Portland, Ore., has taken the Oregon-Washington territory for the Fulton truck.

**Mallalieu & Conrey**, Philadelphia distributors of Heider and Lauson tractors for Maryland, Delaware, New Jersey and Pennsylvania east of Pittsburgh, have moved from 1816 Market Street to 206 North Twenty-first Street. They now have a 60-ft. frontage and three floors 175 ft. deep. Thirty-five tractors are kept in stock, with a large equipment of parts. A considerable portion of the new quarters is given over to tractors. A feature of the display space is a Heider and a Lauson tractor equipped with a gas engine, which is started running for those interested in their operation.

**G. A. Keenan**, Boone, Iowa, has taken the agency for the Master trucks, and will cover the city and Boone and Storey counties.

**The Boone Buick Auto Co.** has taken the agency for the G. M. C. trucks for the following counties: Storey, Boone, Green, Carroll and the south half of Hamilton.

## Garages Adopt 8-Hour Day

**ABERDEEN, WASH., Aug. 31**—Garages of the Grays Harbor district have agreed to go on an 8-hour basis for all business except storage. Hours will be from 8 a. m. to 6 p. m. and no goods will be sold or repairs made except during those hours. Dealers and garagemen on Grays Harbor have formed an association, with Bud Wilson, of Montesano, president; Floyd Smith, Hoquiam, vice-president; Clyde Davidson, Aberdeen, secretary; F. K. Kirk, A. L. Wilson, L. A. Poulson, Aberdeen, and J. C. Walker, Elma, trustees.



# Automotive Equipment

## TRIPLE X HARD-GRIP TRANSMISSION BAND LINING

Cork-lined transmission band lining sets for Fords. Each individual band is composed of three units. The first, which acts on the brakes, is made from compressed cork, the second is a tough and fibrous fabric strip and the third is of multi-woven brake band lining. The set consists of three bands with the necessary rivets. Put up in neat counter display box. Price \$2.50 per set.—Dependon Auto Specialties Co., 1408 Michigan Avenue, Chicago.

## MIDWAY RE-MAGNETIZER FOR FORDS

A device for re-magnetizing the magnets of the Ford magneto. The handle contains a reversible switch and the outfit can be used with storage batteries, dry cells or direct lighting current reduced to 12 volts. By the use of the switch the poles of the coils can be reversed. The instrument may be used without removing the magnets from the flywheel. Price \$12.—Midway Mechanical Co., 1555 Selby Avenue, St. Paul, Minn.

## BB POWER PULLEY AND SPECIAL HUB CAP

A 5-in. crown face belt pulley 10 in. in diameter designed for attachment to either rear wheel of an automobile by unscrewing and replacing the hub cap. It forms a means of transmitting power to any belt-driven machinery. The device weighs 20 lb. Price \$5.65.—Bayne Mfg. Co., Bushnell, Ill.

## BOE BARREL ATTACHMENT

An attachment for handling semi-fluid oil. It consists of a 30 x 7 in. 4-gal. self-measuring tank and truck with wheels and double rear caster. This is used in connection with the original oil barrel and operated by means of air pressure which is employed both to fill the tank from the barrel and also to discharge its contents to the point of use. A combination barrel attachment for handling transmission oil is also made. It is similar to the other outfit but is of extra heavy construction and is furnished with automatic stop for self-measuring tanks. Price is \$45 for transmission oil and

\$30 for semi-fluid.—H. M. Boe Co., 2416 University Avenue, South East, Minneapolis.

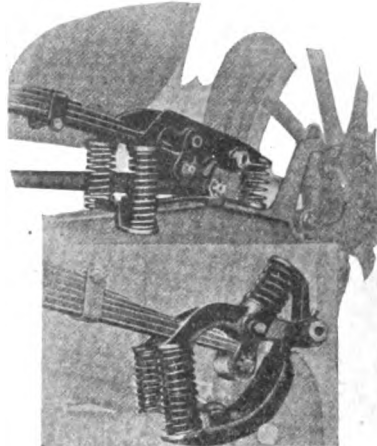
## SAFETY SIGNAL SEMAPHORE

A combination of taillight, license plate and signal for indicating the driver's intentions to following vehicles. The device is controlled electrically from the steering column, or from the dash if desired. The controlling device has three small colored lamps which indicate to the driver the position of the semaphore signal when set. The oblong above the regular red taillight is green and comes on as a caution light and the semaphore arm swings to right or left, indicating a corresponding turn. All wires are incased in a single cable and the operating power is conveyed to the semaphore by two solenoids.—Safety Signal Corp., Galesburg, Ill.



## RED DEVIL CORRUGATED LOCK WASHER

A corrugated lock washer nut which has 6 points of contact, 3 on the nut and 3 on the bolt. Made of oil tempered manganese steel, gunmetal finished. It is made to hold under conditions of extreme vibration. Comes in



## FLOAT-A-FORD

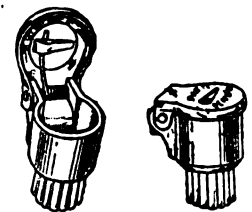
An auxiliary spring shock absorber for Fords. There are springs on both sides of the fulcrum of the shock absorber lever which are alternately elongated and compressed under vibration. The absorber is made of high-test steel valve springs and installation is made with ordinary tools.—Burpee-Johnson Co., Hume-Mansur Building, Indianapolis.

## REX OIL CUP

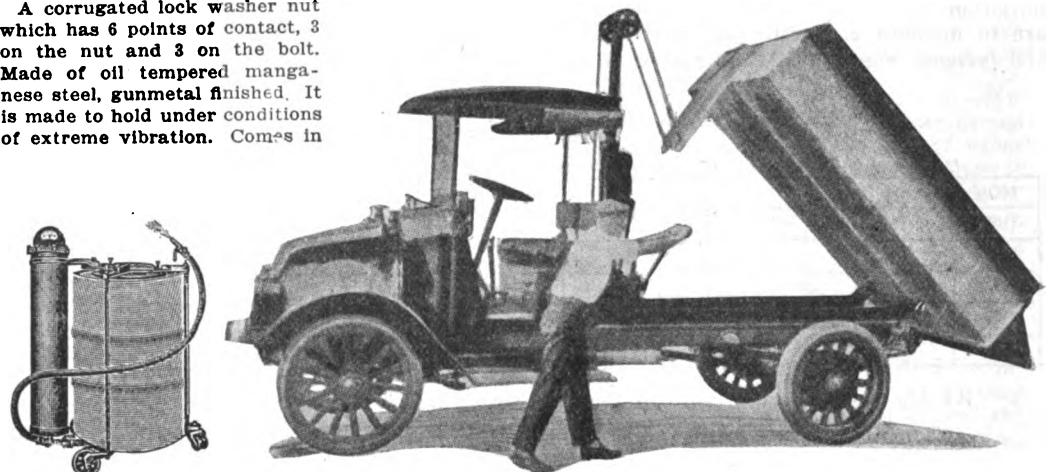
A cup designed to enable the use of oil on a car which was intended to use grease. The cup consists of a one-piece body with self-closing cap. The spring is constantly lubricated and is self-draining, preventing rust or gumming. Model A is not threaded as is for use in drilled holes. Model B is threaded and is for general use, with cotton or felt oil retainers

## ARCHER DUMP HOIST

End dump hoists and bodies for trucks and trailers of from 1 to 5-ton load capacity. The hoist is hand operated and hoist and body are furnished complete, ready for mounting on any truck chassis. The body can be held stationary by a ratchet wheel at any angle. The special double-operating tail gate has a slide-gate arrangement in the center to permit the operator to spread materials over any desired area. Prices are from \$225 to \$450 according to capacity of hoist and size of body.—Archer Iron Works, Chicago.



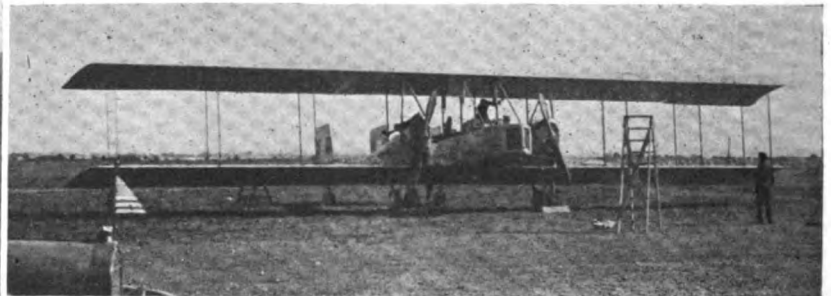
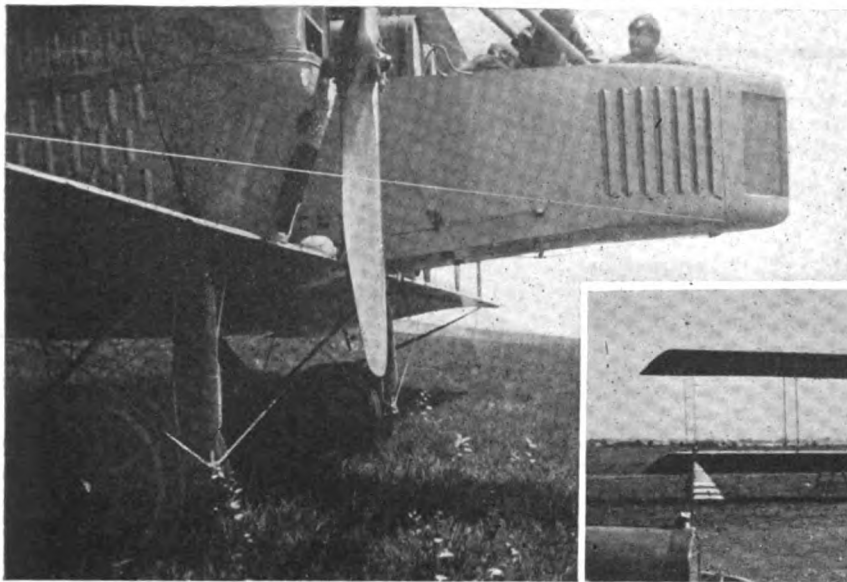
and special stem lengths to order. Model C is similar to B, but has a right-angle stem and Model D has a 45-deg. angle stem made in any length. Prices are from \$8 per hundred to \$1.50 each, according to model and size.—F. X. Devlin, 198 St. Clair Avenue, Detroit.



# An American-Built Caproni Biplane, Equipped with Liberty Engine



Italian officials state that the Caproni is considerably improved by the use of the Liberty engine instead of the engine used in Italy, as it provides about 60 hp. additional



The Liberty engine used is of the Seaplane type, developing about 360 hp. It is of similar design to the military type but develops about 90 hp. less. Major General William L. Kenly, Chief of the Department of Military Aeronautics, U. S. Army, is seated in the machine shown in the large photograph

## Are You Doing Three Hours of Productive Work a Day?

EVERY hour of productive sales work done is a certain amount of money in the pocket of the dealer. Just what it is worth will depend on what you are selling. The maker of the Delco-Light says that each hour so spent is worth \$20. Three productive hours a day mean \$60. What is your average or haven't you ever stopped to consider it in that light? The Domestic Engineering Co., Dayton, Ohio, has started a "three-hours-a-day" club with no dues and no initiation fee. The objects of the club are to increase productive selling work and decrease non-productive selling work.

Productive work is work done in the presence of a prospect, directly influencing him to sign an order. This time is the only time that counts for anything on the debit side of the books or yields a profit.

Non-productive work is that which does not directly influence the prospect to sign an order. It consists of a number of things some of which are:

- Riding out to see prospects in your automobile.
- Fixing tires.
- Repairing the automobile.
- Talking about the weather.

- Talking about the crops.
- Talking about the war.
- Installing plants.
- Wiring up plants.
- Making service calls.

Increasing the productive hours and cutting down on the non-productive hours means increasing the profits of the concern or of the salesman. Of course it is impossible to make your working time 100 per cent productive. There are a certain number of hours which must be spent getting out to the prospect. Again it may really be necessary to talk a little to the prospect about other subjects than buying a farm lighting plant, but if any man analyze his time, he can certainly see that much of the non-productive time can be cut out.

It takes most salesmen 9 hours a day to do 3 hours of productive selling work. If you don't believe it keep a record.

Delco has designed weekly report cards for recording productive selling work. The length of time spent in actual productive work in front of the prospect is marked down on the card, and the totals noted each day. A study of the cards will suggest means for decreasing the non-productive time.

	A.M.						P.M.						TOTAL					
	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	Hrs.	Min.
MON.																		
TUES.																		
WED.																		
THUR.																		
FRI.																		
SAT.																		

Weekly report card issued by the Delco company to its salesmen to check the time they employ in productive selling work

## Kansas Farmers Need More Local Delivery

**They "Threshed Out of the Can" This Year and the Grocers Carried Food on Trucks**

KANSAS CITY, Aug. 31—Farmers "threshed out of the can" this year.

Consequently hundreds of tons of groceries had to be moved to the farms during the harvest season.

It was moved, without any appreciable effect on transportation facilities.

The movement was possible because of the trucks and motor cars already using the country roads.

Ordinarily a farmer's wife plants and raises her garden in great measure as a preparation for feeding the numerous and hungry harvest hands. It takes several times a town man's allotment of green stuff, fruit, preserves, bread and meat, to satisfy the hunger engendered from work in the fields.

The work was just as hard this year as ever. But the drouth had cut almost to nothing the crops of vegetables. Sugar corn, tomatoes, peas, beans, beets, berries, melons, apples—all these are more or less curtailed in nearly every district. And the farmer's wife had to buy stuff from the grocery to take their places. Often, of course, the farmer's daughter went to town in the automobile, and brought home what was needed.

In many districts, however, the village grocer put on a special delivery into the country to take the canned goods and other vegetables, the bread and fruit, out to the farmer.

Geo. C. Johnson, known widely as "the big Platte County grocer," of Platte City, Mo., was one who established this delivery service.

Under ordinary circumstances Mr. Johnson makes no deliveries of groceries except within the city of Platte City. But he established the service during harvest as his contribution to winning the war with a big wheat crop. He made no charge for taking the orders to the customer. His Ford truck made trips up to 10 miles on such deliveries. He had previously announced to many of his farmer-customers, who usually came in for their supplies, that he would establish the service, and they gave their orders over the telephone.

### Ohio Forms State Highways Body

COLUMBUS, OHIO, Aug. 31—Organization of the highways transportation situation in Ohio is to be put on a solid basis under the direction of the National Council of Defense. A complete state-wide organization is to be effected for carrying out the work which is being undertaken by the highways transportation committee of the Council of National Defense. There is to be a state highway transport committee of five members. There will also be a state chairman appointed with the approval

of the Governor. The state will be divided into five districts, each of which will be under the jurisdiction of one of the five committeemen. These central committeemen will have under them local organizations to be known as district highway transport committees, with a chairman for each county. Headquarters will be at Columbus, and the committee in general will work under instructions from Washington.

### Eliminating Service

TRUCK dealers who incur heavy expense in maintaining service departments with maximum capacity to care for all trucks sold locally may profit in several ways by encouraging purchasers of even small fleets to maintain their own shops and mechanics.

In a Kansas City case the truck purchaser has found the employment of his own mechanic profitable from many angles.

Charles Isreal, formerly operating horses in a transfer business, went over to trucks in November, 1917. With his first truck, a Maxwell, he established a shop and hired a good mechanic. This man is paid \$35 a week.

Now that Isreal has five trucks the mechanic is busier than when the fleet consisted of only one; but he is not engaged on company work all the time.

The original arrangement with the mechanic was that he should use the shop for outside work when not engaged in company repairs, and he has made much extra money during the past 10 months through such extras—and Isreal has thus been able to hold him pending the time when his truck fleet should be further enlarged.

This fall the fleet will number 9 trucks, and the mechanic will have less time for outside work.

The mechanic makes many short trips with a truck himself, and frequently takes short rides with the other drivers to note how the machines are running.

The availability of this "extra driver" is sometimes worth real money, when orders are pressing, and a truck in the garage ready to go. A passenger car is maintained at the garage, in which the mechanic goes, at any hour of the day or night, to attend a truck that may be stalled on the road.

The mechanic inspects each truck thoroughly every evening, and so keeps them all in perfect condition.

### Redfield on Priority Committee

WASHINGTON, Aug. 29—William C. Redfield, Secretary of Commerce, has been appointed a member of the Priorities Committee of the War Industries Board. His appointment is regarded as distinctly advantageous to industries classed as non-war. Last week Secretary Redfield declared himself in favor of giving more attention to the so-called non-war industries so that their organizations and factories will be kept intact for after-the-war trade.

## Women Take Place of Men in Many Garages

**Women Parts "Men" and a Vulcanizer Appear—Do Even Heavy Mechanical Work, Too**

CINCINNATI, OHIO, Aug. 31—Harry Single, who runs a large garage on Seventh Street, in this city, finding himself unable to maintain the necessary number of men employees, tried the experiment of using women. He filled two vacancies from the Y. M. C. A. School, where efficient training had been given, and the women put to work proved so satisfactory that he has been adding others. They grind valves, take up brakes, change motors, and, in fact, do all the mechanical work that a man does. Single likes their work so well that he is going to keep on substituting them for men for the reason, as he claims, that they are more conscientious and competent than the men he can get under present conditions.

### Has Woman "Parts Man"

FORT DODGE, Aug. 31—Owing to the shortage of labor and the question of getting suitable men to fill the position, the Knight Motors Co. has decided to employ a woman to look after the parts department. Eventually the company expects to employ women in the various mechanical departments. Paul Tierney, of the mechanical force, has been called to the service and is now stationed at Ames taking a course of instructions on motors.

### Here's a Woman Vulcanizer

FT. DODGE, Aug. 31—The Guarantee Vulcanizing Co., finding it difficult to get men to fill positions in the vulcanizing department, is now employing women in this department. Miss Winifred Higby is the first woman to be employed in this capacity, and she is doing her work so well that the firm intends to use women entirely in this department hereafter.

### Ran Short-Handed to Help Harvest

KANSAS CITY, MO., Aug. 31—Few if any motor car dealers or garagemen closed their places of business in order that employees might help harvest wheat this summer. But nearly every one of them—in the larger cities as well as in the villages—ran short-handed during the two or three weeks of harvest in their communities. In most communities harvest corps were made up late in the afternoon of town men, who were carried to harvest fields in motor cars volunteered for the purpose, where they worked until 10 or 11 o'clock—moonlight prevailing fortunately while harvest was on in some districts.

## Piano Moving Cheaper by Truck Than Horses

### Kansas City Music Dealers Also Find It Safer—Victrolas De- livered by Trailer

KANSAS CITY, MO., Aug. 29—Music dealers in Kansas City territory are finding it cheaper and safer to deliver pianos and talking machines by truck a distance of 40 miles than by train.

The Field-Lippman Piano Co., of St. Louis, is using the truck extensively in delivering merchandise from its Sedalia store. For more than a year it has been delivering all Victrolas by trailer behind a Ford within 40 miles of Sedalia, delivery being made of a single Victrola, though the trailer will hold two. The boxing and transportation to the freight station are saved—about \$2.50—and the freight itself, around \$2. The company figures that delivery by Ford and trailer costs about 10 to 12 cents a mile. The equipment is owned by the company.

The Field-Lippman company hires its pianos delivered, many going as far as 40 miles, by truck. The truck company charges on the basis of \$5 for a 15-mile delivery, and sends two men. Longer trips and trips under especially difficult conditions are charged proportionately. For instance, last winter a truck with a piano was sent out through snow several feet deep; the men had to shovel their way through drifts 5 ft. deep occasionally; but the piano was delivered safely. The economy of truck delivery of pianos is even more pronounced than the trailer delivery of talking machines. A piano box is worth \$3.50. None is needed for truck delivery. The expense of unloading and setting up a piano shipped by train is considerable. Ordinarily no representative of the store accompanies the piano, although one would have to be at destination to care for the piano if shipped by train. Occasionally, when the contract has not been fully effected for a piano, a salesman goes along to complete the deal.

Once in a while a salesman will take the Ford, trailer and Victrola to a customer, when he sees a prospect of business in the community. Instead of waiting for a train to take him back home he can leave when his business is over.

While motor trucks are improving service from the dealers of the smaller towns to their customers, they are also simplifying the moving of pianos for the big-town stores. During the past two weeks one of Kansas City's larger stores has used truck service for delivering its sales a distance of 70 miles and picking up pianos to be returned to the store. On many of the trips made by H. Gover, of Ottawa, to Kansas City, 65 miles, with household and other goods, a piano is stowed away inside the load.

Not only is the number of handlings of the piano reduced by using truck serv-

ice, but experience shows that there is far less danger of damage in transit.

### Where the Fault Lies

BOSTON, Aug. 24—There has been some comment in the Boston newspapers about the apparent lack of motorists to take up the idea of giving soldiers a lift along the road from time to time, while in other places they have "Salute and Ride" cards on motor cars extending to the boys an invitation to jump in.

The matter was discussed unofficially a few days ago, when members of the Bay State Automobile Association were having their noon luncheon. The members of the club agreed that they would not overlook the soldiers where a lift would be of very much benefit.

But it was pointed out that under the Massachusetts law, and which has been sustained by decision of the State Supreme Court, if any owner of a motor car invites another person to take a ride in the vehicle the guest may maintain an action for damages if any accident happens in which the guest is injured. It does not matter whether the host is at fault or not. Cases having been so decided, motorists who know the law are somewhat averse to playing host too often.

If a soldier were killed or injured, and some unscrupulous attorney should learn of the circumstances, the lawyer might begin action right away and tie up a man's business or blackmail him into a settlement regardless of the wishes of the soldier's family or the circumstances surrounding the accident. And with so many cars on the road now there is danger in being too kind. The members, however, are willing to pick up lads when necessity requires it.

### Cars at State Fair

HARTFORD, CONN., Aug. 29—There is to be an automobile section in connection with the annual Connecticut State Fair at Charter Oak Park the first week in September. The local dealers as a whole were opposed to displaying at the fair, though some of them have signified their intention of doing so.

### Ford to Produce Whippet Tanks

DETROIT, Aug. 31—The Ford Motor Co. has begun production of thousands of Whippet tanks of the small type for the Government, for which it has been awarded a contract amounting to millions of dollars. The Ford company has been experimenting for some time with the small tanks similar to those which recently achieved success on the western front, and is now in a position to manufacture them on a large scale. Before the contract was received officials of the company stated that small tanks could be turned out with nearly as great rapidity as Ford cars, and it is expected the daily output of tanks will be extremely large. The exact size of the contract is not stated, but it is reported to be one of the largest received in Detroit.

## Philadelphia Wants Rural Express Fleet

### Plan to Bring Food to Market Three Times a Week—To Aid the Small Farmer

PHILADELPHIA, Aug. 28—At a meeting of the agricultural division of the Federal Food Administration representatives here, with farmers and truck gardeners, it was decided to look immediately into the feasibility of establishing a large fleet of motor trucks to make daily collections of vegetables and fruits and bring them direct to the new curb food market which has been opened in this city. The Philadelphia curb market will be a permanent agricultural feature.

The first curb market has been established just outside of the Girard College grounds on North College Avenue, and will be conducted on Tuesdays, Thursdays and Saturdays.

The plan outlined, though not formally adopted, suggests that farmers within a radius of 25 miles of Philadelphia, who raise approximately 10 acres of garden truck, or have that much ground to cultivate for the purpose, deposit their food-stuffs at definite points agreed upon with the Food Administration. Motor trucks will then pick up the loads and deliver them direct to the curb market. The Food Administration under the plan would take charge of collections and deliveries. This would solve the problem of getting to market the large quantities of vegetables and fruits in Pennsylvania which are rotting for lack of proper distribution. The aim is to have this service for the smaller, or truck, farmer who has no adequate transportation facilities but whose output is needed in Philadelphia.

General approval of the plan indicates that it will be adopted soon. In that case, the trucks will be ready and the routes laid out as soon as the Food Administration can determine the number of farmers who will place produce regularly at the points of call and how much will be deposited. As a "feeler," enough motor truck owners have signified their willingness to do the transporting to make the proposition a success. The motor truck plan would save railroad fare and the labor of hauling and handling from the railroad terminal to the market.

The small farmer, it is argued, cannot afford to bring his produce to market at the present cost of labor and the high railroad rates and take a chance on finding a market for it. Under the proposed system the market would be assured. The farmer would be willing to accept less than current prices for his output because his expense in labor and transportation are reduced and retailer and farmer could split the price and the consumer benefit also. Distribution has been the big problem in Pennsylvania. The produce is here and it is now hoped the market for all of it will be made certain. It is intended to open two more curb markets in the near future.



# Request For First Motorless Sunday Generally Observed

*Mandatory Order Not Likely and Sunday Driving Probably Will Be Sanctioned Again Early in October*

NEW YORK, Sept. 2.—The first motorless Sunday has come and gone. It is too early yet to know definitely how much gasoline was saved by the voluntary abandonment of cars on Sunday by their owners; but the Oil Division of the Fuel Administration believes that the saving has been substantial.

Despite the carefully worded announcement of the Fuel Administration, some little misconception regarding the statement exists. In the first place, no mandatory order has been issued. The Fuel Administration "requested" that owners refrain from using their cars, purely as a means to save gasoline in view of the greatly increasing demands for this kind of fuel for war and war work. It has not ordered that no cars be run on Sundays, nor will it do so unless its request is ignored. It is not expected that any such order will be issued.

The announcement clearly states that the request applies only to States east of the Mississippi River. This is because the situation is not nearly as acute in the West where transportation facilities are better and where production centers are nearer to the consumer.

The request is not intended to work any hardship where the use of cars is absolutely essential. In other words, if it is without question necessary that a car be used to reach a locality that is not served by the railroads or the trolley cars, then a motor car may be used—but there must be no question of the necessity of the use. The intent of the request is merely to eliminate what the Fuel Administration describes as "pleasure riding."

Hence, certain uses of cars, trucks and tractors are not included, as is made plain in the following statement:

## Fuel Administration's Statement

The United States Fuel Administration considers it necessary that a limited conservation of gasoline be undertaken in the States east of the Mississippi River in view of the increasing demand for gasoline for war purposes and the paramount obligation of meeting promptly and fully all overseas requirements.

An appeal is made therefore to the people of the United States east of the Mississippi River to exercise rigid economy in the consumption of gasoline during the next few weeks as a necessary and practical act of patriotism.

War necessities are being and will continue to be promptly and fully met, but this is the period of the year when consumption of gasoline is at its highest, and the increased domestic demands, together with the extensive military operations in France, have rendered necessary for a limited period the adoption of safeguards against possible shortage.

In view of the difficulty, if not the impossibility, of differentiating between the various uses to which automobiles are applied, the United States Fuel Administration believes that the greatest measure of economy can be effected with the least interference with the business of the country through the discontinuance of the use of all classes of motor vehicles, motor boats and motorcycles on Sundays.

The United States Fuel Administration therefore requests that in the section of the United States east of the Mississippi River there shall be a discontinuance of use of the vehicles above specified, including all such as are operated for hire, on each Sunday hereafter until notification that the need for such discontinuance has ceased.

The following exceptions are made:

## Here are the Exceptions

1. Tractors and motor trucks employed in actual transportation of freight.
2. Vehicles of physicians used in performance of professional duties.
3. Ambulances, fire apparatus, police patrol wagons, undertakers' wagons, and conveyances used for funerals.
4. Railway equipment using gasoline.
5. Repair outfits employed by telephone and public service companies.
6. Motor vehicles on errands of necessity in rural communities where transportation by steam or electricity is not available.

In addition to the above, appeal is made to the patriotic men and women of America, east of the Mississippi River, to undertake voluntarily additional conservation in the operating of their own automobiles, wherever possible.

The United States Fuel Administration believes that all consumers of gasoline will observe the spirit of this request. In that event no mandatory order governing the use of gasoline will be necessary.

The heavy demand for gasoline overseas for use in airplanes, tractors, tanks, trucks, passenger cars and motorcycles is the principal cause for this conservation measure, while in addition there is the large and constantly growing demand for fuel oil for many of the war machines.

Heretofore, by cracking processes it has been customary to take one barrel of gasoline from two barrels of crude oil. Owing to the exceedingly large demand for fuel oil this proportion is being reduced, and it is likely that shortly only 30 per cent of each barrel will be made to yield gasoline.

While the stocks of gasoline and oils are always low at this time of the year, up to this year production has been slightly in excess of the demand. In July of this year, however, consumption was 29 per cent greater than the July consumption of 1917, while production was 27 per cent greater than in July of 1917.

The Conservation Department of the

Fuel Administration points out that there are 5,000,000 automobiles in use in the United States, and that if each passenger car owner will do his utmost to conserve gasoline, preventing spills, racing of engine, etc., each owner can probably save from ½ to 1 pint per day, which in itself would effect a sufficient saving to meet the excess demand.

The Conservation Department plans to establish oil conservation districts throughout the country, placing automobile dealers at the head of each district together with committees to be composed of newspaper men, automobile club representatives, oil industry representatives, garagemen and dyers and cleaners. These committees will in turn appoint for each county.

Huge posters will be displayed everywhere, and all garages and oil stations will be instructed in every means of gasoline and oil conservation. The Fuel Administration is desirous of securing conservation of oil and gasoline without issuance of any direct orders, and is adopting the plan of intensive education for that purpose.

Following is the statement by the National Automobile Chamber of Commerce:

## To Members:

In connection with the request of the Fuel Administration for the discontinuance of Sunday automobiling, motorboating and motorcycling for mere pleasure, we are told by an official of the Fuel Administration to-day that the restriction is expected to be necessary only a short time, probably four to six Sundays, which would provide ample increased stocks of gasoline.

The production of gasoline increased 27 per cent in July over the same period last year, but consumption increased 29 per cent.

It was felt that with the increasing demands from overseas, and some difficulties in transportation, a conservation plan such as outlined is necessary.

Mr. C. C. Winningham, chief of the Gasoline Conservation Division of the Oil Division of the Fuel Administration, said to-day it was deemed best to make this first appeal one to the patriotism of the owners, and the feeling is general that the request will be complied with by all car owners.

After the conference between Dr. Garfield and Mark L. Requa, chief of the Oil Division, statement was made that the action was deemed necessary as a safeguard against any possible shortage of gasoline for our war needs. Because of the difficulty of differentiating between the various uses to which automobiles are applied, it is believed the greatest measure of economy could be effected with the least interference with the business of the country through the discontinuance of the use of motor vehicles, motor boats and motorcycles on Sundays.

Automobile officials view the new order with favor because it will give a further opportunity for motorists to prove their loyalty to the war program. The request is effective Sunday, Sept. 1, and applies to the territory east of the Mississippi River. . . . —National Automobile Chamber of Commerce.

## Dine-DeWees Burned Out

CANTON, O., Aug. 31.—The Dine-DeWees Co., jobber, was on Sunday, Aug. 25 visited by a disastrous fire. The building stock and fixtures were completely destroyed. The company has already secured a new location and will continue business immediately.

## Storm In Boston Over Sunday Motoring Ban

**But Trade Gets Bars Lowered for Necessary Riding—Dealers Are Philosophical**

BOSTON, August 31—President John H. MacAlman of the Boston Automobile Dealers' Association, and vice-president of the N. D. A., stepped into the breach when the Sunday ban on motoring started a storm throughout New England, and as a result of his efforts there was a change for this territory, if not for the entire section. He went direct to James J. Storrow, Fuel Administrator for New England, and had the latter get in touch with Secretary McAdoo and Mr. Garfield on the long distance telephone to change the ruling.

When it first broke in the papers Wednesday morning, everyone was dumbfounded, particularly the motor dealers. And a number of them lost sales that were pending because people felt it was the beginning of the end of riding. Everyone was asking questions. In the midst of it Chairman William D. Sohler of the Massachusetts Highway Commission was quoted in a statement that every motorist on the roads Sunday would lose their licenses through his board. That was a sockdologer.

President MacAlman, realizing what harm was being done went to the State House on Thursday and found Mr. Storrow. They are close friends in business and social circles, and it was not difficult for the automobile man to get in to see the Fuel Director. Then Mr. MacAlman laid the cards on the table.

### Dealers Phone Washington

He explained to Mr. Storrow what had been talked about at the conference at Washington with the dealers, and the plans of the fuel administration to conserve gasoline, and how to go about it. Then he requested that they call Dr. Garfield. This was done. The matter was talked over for some time and a clearer understanding seemed to be in the air.

Then Secretary McAdoo was located and to him the subject was put convincingly about the absurdity of preventing families returning home with children to get ready for the opening of schools, etc., from being able to take a taxicab with their trunks; how the agreement among the motorists did not call for such drastic orders. Secretary McAdoo was told that in many places trains had been cancelled entirely on Sundays, and that New Englanders were good churchgoers so they were entitled to the privilege of attending services. As a result of what was poured into the ear of Secretary McAdoo from Boston James J. Storrow issued a statement Thursday night in which the ban was materially lifted.

According to the latest figures there are 338,531 motor cars in New England,



*This is the poster which the Oil Division of the Fuel Administration has prepared. It will be distributed far and wide in the gasoline conservation program*

and the request would affect about all of them. Also there are some 25,000 motorcycles and some 12,000 power boats in the territory, therefore the total number would be about 375,000. Averaging three people to each it would give more than 1,000,000 affected by it. On the basis of five gallons saved by each vehicle it would be 1,875,000 gallons conserved in New England alone. It is estimated that the hotels and inns throughout New England would lose more than \$500,000 on Sunday alone. Coming just before Labor Day these places were hit much harder than if it were any other Sunday, for they had ordered plentiful supplies for visitors over the holidays, and cancellations flew thick and fast to the ones too far from Boston to be reached Saturday afternoon and evening.

Even though there was a modification of the ruling the people were all muddled. The automobile dealers took it philosophically, for they felt that so many times they had been preaching the doctrine of motor cars being a necessity that now it will be proven so beyond doubt.

### Federal Approval Needed for Road Work

WASHINGTON, Aug. 27—Federal approval will be required for all highway construction, according to the regulations made public to-day and effective next month by the United States Highways Council, which governs highway and street work during the period of the war. Formation of this council was announced recently in these columns. It comprises representatives of the War Department, Agricultural Department, War Industries Board and Council of National Defense.

## Sunday Motoring Ban Helps Early Closing

**N. A. D. A. Flooded with Inquiries and Glad of Request Barring Cars on Sunday**

ST. LOUIS, Sept. 2—The motorless Sundays order for east of the Mississippi brought an avalanche of correspondence by wire and letter to the N. A. D. A. offices here. After Assistant Secretary Holke had waded through all of the communications he said:

"I believe from the tone of the recent communications from west of the river that the Eastern order is going to remove all difficulties in the way of enforcing the War Service Regulations. Those who have held back for one reason or another now see that the War Industries Board or its various sections mean business, and that it will take very little provocation to make a very drastic ruling for the entire country. I think that our appeals to 'come in before you are driven in' will have far more effect.

"To the Eastern folk we can say nothing, as the N. A. D. A. has been working tooth and nail to avert just such slaps at the motor car owners and the trade as this one, but we have not had the complete support from the allied trades that we should have. Some of the people who now want our aid are the people who would not join in our Sunday closing movement. Just what they will do now remains to be seen. They can keep open without business, if they want to, until a further order comes, perhaps."

The recent correspondence indicates a more wholesome acceptance of the War Service Regulations. But there still are yetty annoyances. President Vesper during the past week took up the task of co-ordinating the efforts of the various Federal committees who have anything to do with saving of man power in the motor car and allied trades. He is taking the position that there soon will come a time when the people at fault will be pointed out, if there is not complete success. His first response came from George N. Peek, commissioner of the War Industries Board, who said that the efforts of the N. A. D. A. were appreciated and that he had taken up the task of getting the co-ordination Mr. Vesper asked.

### St. Louis Closes Tight

ST. LOUIS, Sept. 2—The closing of automobile service stations and oil depots was made a fact here last Sunday when Commissioner Robert E. Lee arranged that a police order be made that patrolmen report all such places of business remaining open after 7 p. m. daily and on Sunday. The mere fact that a policeman inquired as to why the place was open, and informed the proprietor that he had orders to make a formal report, had a big effect on some who have been inclined to doubt the cause of the closing order.

Recently Commissioner Lee has been

inquiring of a few objectors as to their reason for being unpatriotic. Three main stories were uncovered:

No. 1—That the officers of the St. Louis Association received a large bribe for selecting emergency stations permitted to remain open at night.

No. 2—That the Closing Commissioner owns the only oil station permitted to remain open.

No. 3—That a moonshiner who sells gasoline (sometimes) after hours for 50 cents a gallon has a "stand in."

These pro-German rumors were traced backward, and one of them located at the source. The persons who had been repeating them were told to "shut up at once or explain in Federal Court." They promised to be good. However, while circulating the stories caused much unrest among the dealers who did not take the pains to inquire whether there was an oil station open on Sunday, which would have settled at least one of the reports.

#### Double Car Taxes

WASHINGTON, Sept. 3—The war tax on the sale price of passenger cars is more than trebled and that on motor trucks practically doubled in the new War Revenue Bill which has been presented in the House of Representatives by Chairman Kitchen of the Ways and Means Committee.

The manufacturers' tax on passenger cars is put at 10 per cent and the levy on trucks, including accessories, at 5 per cent. Agricultural products, which, presumably, may be taken to mean farm tractors, are not taxed.

In addition to these manufacturers' taxes there is also a provision to tax the owners of passenger cars on a horsepower basis as follows:

Up to 23 hp.....	\$10
23 to 30 hp.....	20
30 to 40 hp.....	40
over 40 hp.....	40
motorcycles .....	5

At the last moment the Committee added a tax on the gross receipts of sight seeing automobiles and taxicab companies. Proprietors of sight seeing cars to pay 10 per cent of their gross receipts, taxicab companies operating three or more cars to pay 5 per cent of their gross receipts.

#### Pennsylvania to Have Tractor Demonstrations

HARRISBURG, Sept. 3—The State of Pennsylvania will conduct state farm tractor demonstrations on Sept. 19, 20 and 21, when 250 acres for winter heat will be plowed and cultivated. Plowing is to be done on Sept. 20 when 8 hr. will be given over for this work, from 9 to 12 in the forenoon and 1 to 5 in the afternoon. On the third day, Sept. 21, the tractors will disk, pulverize and sew the wheat. The first day will be very largely given over to getting ready for the work. In these tractor demonstrations it is planned to keep a very complete record of the performance of each tractor, with regard to fuel used, oil required, plowing speed, depot, number of stops, delays, etc. The place is undecided yet.

## Wisconsin State Body of Garagemen Coming

### Milwaukee Dealers Association to Hold Meeting Sept. 11—Ready for Fall Show

MILWAUKEE, Sept. 2.—The Milwaukee Automobile Dealers' Association has taken the initiative in the organization of a state association of dealers and garagemen, by calling a mass meeting at Milwaukee on Wednesday, Sept. 11, during State Fair Week. Invitations have been issued to approximately 1,700 members of the trade in Wisconsin to attend a dinner at the Milwaukee Athletic Club, to be followed by an organization session, at which it is hoped to present F. W. Vesper, St. Louis, president of the National Automobile Dealers' Association, and E. E. Peake, Kansas City, executive secretary of the N. A. D. A., as the principal speakers. The convention is called for State Fair Week because this is regarded as the most convenient time for the representative dealers to come to Milwaukee. The fall show of the Milwaukee association in connection with the State Fair usually brings to the city as many or more dealers as the annual show in the Auditorium in January.

George W. Browne, Milwaukee, Overland and Willys-Knight distributor, and first president of the National Association, is chairman of the arrangements committee for the convention and banquet. Mr. Browne has received practically definite assurance from Messrs. Vesper and Peake that they will be present. Bart J. Ruddle, secretary of the N. A. D. A., is secretary and manager of the Milwaukee association and, of course, he also will be on hand.

The annual fall show at State Fair park, which will run co-incidentally with the fair, Sept. 9 to 14, will have as many passenger and commercial car exhibits as a year ago. The Motor Hall on the fair grounds, which again will be devoted exclusively to exhibits of the Milwaukee association, is 200 feet wide and 345 feet long, and will be amply filled with cars, trucks and accessory displays. The decorative scheme will be new and in the national colors. The principal exhibitors will be as follows:

#### Plan Wisconsin Tractor Show

MILWAUKEE, WIS., Aug. 31.—Final plans for a state-wide tractor rally to be held in Milwaukee during State Fair Week, Sept. 9 to 14, will be made by the Wisconsin Power Farming Association at a meeting to be held in the Hotel Medford, Milwaukee, on Tuesday evening, Sept. 3. The association met on Aug. 27 to discuss plans and postponed action for one week in anticipation of a full attendance of members, each of whom is a sales manager, branch manager, or distributor of farm tractors in Wisconsin.

The purpose of the rally will be to bring to Milwaukee all dealers and owners of tractors so that they may be informed concerning the service plan being evolved by the association. It will be the first time that the farm tractor has been the basis of a state convention in Wisconsin. Not only will the aim be to arouse a still greater interest in the farm tractor than already exists, but dealers will be told that it will be imperative for them to provide adequate service, and farmers will be given the assurance that they, as tractor owners, will be given the same attention and service that the motor car trade now gives its customers.

The board of directors of the Power Farming Association has been increased to seven. Two new members were elected on Tuesday, namely, J. F. Carson, International Harvester Co., and Lee M. Turner, of the Turner Mfg. Co., Port Washington, Wis. F. W. Geddes, of the Cleveland Tractor Sales Co., previously was elected a director. The four principal officers complete the board.

E. A. Braun, of the Trenam Tractor Co., with headquarters at 736 Merchants' & Manufacturers' Bank Building, Milwaukee, is secretary of the association.

#### Motor Transport Under General Staff

WASHINGTON, Aug. 31—That the Motor Transport Corps of the U. S. Army, recently formed as told in a past issue of Motor World will remain directly under the supervision and direction of the General Staff, is shown by the reorganization of the General Staff with an Operations Division which will contain a Motor Transport Branch to supervise the Motor Transport Corps.

This branch will consequently be the supreme body governing purchase, procurement and design of the motor vehicles of the army. The General Staff is the division of the army that plans, develops and executes the army program directly under Secretary Baker. This new reorganization apparently means that the Motor Transport Board comprising officers of the various army corps and bureaus and which is the consulting board working with the Chief of the Motor Transport Corps, will hereafter operate under the direction of the General Staff Branch.

The three directing officers of the Motor Transport Corps are members of the General Staff and since the announcement of the order of reorganization specifically states that no changes of personnel are affected, it is expected these officers will form a part of the Motor Transport Branch of the General Staff.

The order which is known as General Order No. 80 also states that the object of the reorganization is to prevent duplication and to correlate the motor activities of the various army bureaus.

It is further stated that aircraft production, aircraft operations and tank activities will operate directly under the supervision of the Chief of the General Staff insofar as military affairs are concerned.

## Prominent Tradesmen Assume New Duties

### Resignations and Promotions Place Workers in New Places

Fred G. Pennel has been appointed general manager of L. R. Mack, Inc., Albany, N. Y. He will have charge of the Albany, Schenectady and Amsterdam sales offices of the corporation.

Stanley Porter, production manager of the Jackson Rim Co., Jackson, Mich., has resigned to return to the Hayes Wheel Co. of that city, in a similar capacity.

Dr. Orrel A. Parker, manager of the wheel department of the Hydraulic Pressed Steel Co., Cleveland, has been placed in charge of records under W. F. Parrish, chief of the oil and lubrication branch, supply section, in the office of the director of military aeronautics.

J. H. Morrill, formerly in charge of the engineering department of the Northway Motors Co., Detroit, has been appointed assistant chief engineer of the Buda Motor Co., Harvey, Ill.

A. W. Voegel, of Detroit, has been appointed assistant to Maurice Rothschild, general manager of the Regal Motor Car Co., Detroit, who is formulating plans to reorganize the company for the start of manufacturing at close of the war.

A. H. Sawyer has been appointed manager of the truck department of the Missouri Packard Co., St. Louis.

C. W. Lynn has joined the sales force of the Landman-Griffith Co., Toledo, distributor of the Maxwell and Paige, and will act as territory representative in the northwestern Ohio district. He formerly acted in a similar capacity for Ralph Parker when he conducted the Haynes agency.

P. R. Preston, advertising manager Rock Island Plow Co., Rock Island, Ill., has resigned and gone into the service with a machine gun company.

W. H. Yule, head of the mechanical goods department of the B. F. Goodrich Rubber Co., Akron, has been placed in direct charge of the company's relations with the Government. He has been in charge of mechanical goods sales for 2½ yr., rising to that position from the managership of the Goodrich branch at New York City.

John Squires, chief engineer of the Signal Motor Truck Co., Detroit, has resigned, effective Sept. 1, and will go into business for himself. S. Deutsch, vice-president of the company, will take up his duties.

D. P. Cartwright has been appointed manager of the New York Branch of the North East Electric Co., to succeed R. J. Hardacker, who is shortly to assume the management of the Chicago branch.

T. P. C. Forbes has been made assistant sales manager of the Fulton Motor Truck Co., Farmingdale, L. I.

E. C. Newcombe has been made a director of the Four-Drive Tractor Co., Big Rapids, Mich., and also vice-president. Two resignations from the directorate are those of George A. Wright and Harley Frederick, the latter of whom is expected to remain as manager of the plant.

L. F. Miller, formerly of the Mitchell Motors Co., Racine, Wis., has accepted a position with the Anderson Forge & Machine Co., Detroit, as metallurgist.

Wallace C. Hood, who recently resigned as sales manager for the King Motor Car

Co., Detroit, has formed the Foster-Hood Sales & Service Co. and will do general garage work, automobile painting, top re-covering, etc.

Charles M. Wallace, formerly purchasing agent of the Buda Motor Co., Harvey, and later with the Mitchell Motors Co., has been appointed manager of the purchasing department of the Erd Motor Co., Saginaw, Mich.

C. B. Meyers has been appointed manager of the sales promotion department of the United States Motor Truck Co., Cincinnati. He has been with the company for six years, starting as stenographer and filling subsequently the positions of purchasing agent and sales manager, from the time of its reorganization.

David B. Roberts, proprietor of the Hartford Buick Co., 51 Elm Street, Hartford, Conn., leaves for Washington September 6, when he will become attached to the aircraft production. The car selling business will be continued under a manager. Mr. Roberts has handled the Buick for several years past and also carries the International and G. M. C. trucks.

W. G. Bell has been appointed Canadian sales manager of the Cleveland Tractor Co. For the past four years he has been assistant sales manager in the Dominion of Canada for the Studebaker Corp.

Arthur L. Walsh of the Newell Motor Co. staff, St. Louis, has enlisted with the Red Cross as a mechanical engineer and driver in France.

Edward Harrison, superintendent of the garage of the Union Electric Co., St. Louis, has been made superintendent of the repair and rebuilding shop of the Weber Implement & Automobile Co. of that city.

August A. Jonas, president and general manager of the Jonas Automobile Co., Eighth and Wells Streets, Milwaukee, Wis., who has been a distributor of the Cadillac since the days of the famous "one-lunger," has accepted a commission as a first lieutenant in the Quartermaster's Department, and left Aug. 26 for Washington to enter active duty.

William L. Jones, Jr., Milwaukee, who was a teammate of the late Louis Strang on the racing team of the Case factory at Racine, and later was engaged in the experimental and development department, has been commissioned a lieutenant in the Aviation Corps at Ellington Field, Houston, Tex., and, following a short furlough which he is spending in Milwaukee, will go directly overseas.

A. E. Tourssen has resigned from the position of local manager of the Salt Lake Branch of the Randall-Dodd Auto Co. A. G. Randall, general manager of the company, is now personally in charge here. The position of assistant manager will be filled by W. F. Ford, formerly cashier of the Boise office.

C. R. Richardson, experimental engineer of the Parrett Tractor Co., is a captain in the Ordnance Department, with headquarters at Camp Jackson, South Carolina.

C. E. Frudden, chief engineer of the Parrett Tractor Co., is a captain in the Motor Transport Service, with headquarters in New York City.

### Stegeman Becomes Parker Motor Truck

MILWAUKEE, Aug. 31—The Stegeman Motor Car Co., which produces the Stegeman truck, has changed its name to Parker Motor Truck Co. The company states: "The name was changed only after careful consideration. The founder of the company has practically no connection with the present organization at all. It was a name of German origin and we believe that as our soldiers return and tell us of what Germany has stood for the prejudice against everything of German origin will be many times greater than it is now."

### Franklin Advances Prices

SYRACUSE, Aug. 31—The Franklin Automobile Co. has increased the prices its cars from \$450 to \$600, effective at once. The new prices follow:

Model	New Price	Old Price
4 and 5 pass. tour.....	\$2,900	\$2,450
2- pass roadster.....	2,850	2,450
Sedan .....	3,350	2,950
Brougham .....	3,900	3,300
Town car .....	4,050	3,450
Limousine .....	4,050	3,450

### Reo to Make Artillery Tractors

LANSING, Aug. 26—The Reo Motor Car Co. has been awarded an additional government contract for artillery tractors. The Reo company will continue to manufacture trucks until such time as steel needs conflict in any way with Government war needs.

### Automotive Securities Quotations

	Bid	Asked		Bid	Asked
Ajax Rubber Co.....	62	64	Maxwell Motor Co., Inc., com...	26½	27½
J. I. Case T. M. Co., pfd.....	78	83½	Maxwell Motor Co., Inc., 1st pfd.	56	57½
Chalmers Motor Co., com.....	4½	52	Maxwell Motor Co., Inc., 2d pfd.	20	21
Chalmers Motor Co., pfd.....	20	30	Miller Rubber Co., com.....	106	108
Chandler Motor Car Co.....	86	88	Miller Rubber Co., pfd.....	95	96
Chevrolet Motor Co.....	127	130	Packard Motor Car Co., com.....	120	120
Fisher Body Corp., com.....	35	37	Packard Motor Car Co., pfd.....	94	97
Fisher Body Corp., pfd.....	85	85	Paige-Detroit Motor Car Co.....	17	18
Fisk Rubber Co., com.....	60	62	Peerless Truck & Motor Corp.....	15	17
Fisk Rubber Co., 1st pfd.....	98	103	Portage Rubber Co.....	105	109
Fisk Rubber Co., 2d pfd.....	78	83	Reo Motor Car Co.....	14½	15½
Firestone Rubber Co., com.....	105	107	*Saxon Motor Car Corp.....	6	7
Firestone Tire & Rubber Co., pfd.	94	96	Springfield Body Corp., com.....	12	13
General Motors Co., com.....	132	137	Springfield Body Corp., pfd.....	11	11
General Motors Co., pfd.....	78½	80	Standard Motor Construction Co.	12½	13
B. F. Goodrich Co., com.....	44½	45½	Standard Parts Co.....	59	61
B. F. Goodrich Co., pfd.....	99	100½	*Stewart-Warner Speed. Corp.....	56	57
Goodyear Tire & Rub. Co., com.	150	155	*Studebaker Corp., com.....	43	44
Goodyear Tire & Rub. Co., pfd.	97½	98½	*Studebaker Corp., pfd.....	84	90
Grant Motor Car Corp.....	2½	3	Swinehart Tire & Rubber Co.....	50	60
Hupp Motor Car Corp., com.....	2½	3½	United Motors Corp.....	32½	33
Hupp Motor Car Corp., pfd.....	78	82	*U. S. Rubber Co., com.....	62½	63½
International Motor Co., com.....	28	32	*U. S. Rubber Co., pfd.....	103½	104½
International Motor Co., 1st pfd.	61	67	*White Motor Co.....	45½	46½
International Motor Co., 2nd pfd.	35	40	*Willis-Overland Co., com.....	19½	19½
Kelly-Springfield Tire Co., com.	47½	48	*Willis-Overland Co., pfd.....	82	83½
Kelly-Springfield Tire Co., 1st pfd.	81	87	*At close Aug. 31. Listed N. Y. Stock		
Lee Rubber & Tire Corp.....	19½	20½	Exchange. †Par value \$10.		



## Ford Car Price Raised; Truck Reduced

DETROIT, Aug. 31—The Ford Motor Co. has advanced the prices of its passenger car models varying from \$65 to \$90, effective Aug. 16. The touring car has been increased \$75; roadster, \$65; coupelet, \$90; sedan, \$80; chassis, \$75. Simultaneous with the announcement of these increases, a reduction of \$50 was made in the price of the truck, which came as a surprise to the trade and upon which the company decline to comment. On June 10 the company had bona fide unfilled orders on its books for 110,607 cars, divided as follows: touring cars, 89,242; roadsters, 9824; coupelets, 3013; sedans, 1675; trucks, 5234; chassis, 1619. The company now has unfilled orders approximating 112,000, 85 per cent of which is passenger cars. Present and former prices of Ford cars are given in the following table:

Model	Aug. 16	Aug. 1	Aug. 1	Aug. 1	Aug. 1	Aug. 1	Aug. 1
	1918	1917	1916	1915	1914	1913	1912
Touring .....	\$325	\$360	\$360	\$440	\$490	\$550	\$600
Roadster .....	500	345	345	390	440	500	525
Coupelet .....	650	505	505	590	750	...	...
Sedan .....	775	645	640	740	975	...	...
Town car .....	Discont'd	Discont'd	595	640	690	740	...
Truck .....	550	600	...	...	...	...	...
Chassis .....	475	333	325	360	Not Sold	Not Sold	Not Sold

The Ford Motor Co. of Canada has also increased its passenger car prices, effective Aug. 16, from \$85 to \$105. The price of the truck remains the same, \$750. Prices follow:

Model	Old Price	New Price	Increase
Touring .....	\$595	\$690	\$95
Roadster .....	555	660	105
Coupelet .....	770	875	105
Sedan .....	970	1055	85
Chassis .....	535	625	90

The above prices are all exclusive of war taxes.

### Ships Cars to Japan

PORTLAND, Aug. 31—For the past 3 months S. Ban, of Portland, representing one of the largest Japanese importing and jobbing firms on the coast, has been shipping automobiles to Japan. In that period he has shipped approximately 100 cars divided about equally between new and used cars. His purchases so far

Co., Minneapolis. The capital is \$1,500,000 preferred and \$1,200,000 common stock. Cecil Gibson formerly president and general manager of the Madison Corp., is president of the new company, L. A. Brown is treasurer and John F. Green and Frederick N. Judson, formerly controllers of the Bull Co., are on the board of directors. Mr. Green has just succeeded ex-President Taft on the War Labor Board. The factory of the new company is located at Anderson, Ind. Homer McKee will handle the advertising.

### Columbus Stages Fall Show

COLUMBUS, Aug. 31—The automobile show, held in conjunction with the annual Ohio State Fair ending Aug. 31, was one of the most successful displays ever given by the Columbus Automobile Show Co., an organization of local dealers. The attendance at the fair was large, despite the unusual war conditions and a considerable amount of rain which fell during the week. As a large proportion of the attendance was from the rural sections of the state the automobile show was one of the centers of attraction.

Purchasing of automobiles among the farming population is still on the up grade. The farmers have been unusually prosperous during the past few years and they are buying higher priced cars than ever before. Consequently quite a few sales were made during the week and dealers were exceedingly well pleased with the results of the display.

## Lien Laws of All States

(Continued from page 23)

### VERMONT

Every person who makes, alters or repairs an article of personal property at the request of the owner has a lien thereon for his reasonable charges and may retain possession of the same until such charges are paid, and further may, if such charges remain unpaid for 3 months, and the value of the property does not exceed \$100, sell the same at public auction by posting notice in two or more places in the town of his residence for 10 days.

### VIRGINIA

Mechanics have a lien for labor bestowed in improving personal property.

### WASHINGTON

Persons expending labor, skill or materials on articles of personal property at the request of the owner have a lien upon such chattels for the contract price of their labor and materials or for the reasonable price of their services for a period of one year, providing that they file notice of their claim within 90 days from the date of delivering up the chattel and institute an action to foreclose their liens within 90 days after filing notice of lien. 1 R. & B. C., Sections 1154, 1157.

### WEST VIRGINIA

Mechanics and artisans have liens for repairing personal property.

### WISCONSIN

Every garageman or repairshop proprietor who alters, repairs or does any work on any detailed accessory, fitting or part of an automobile, motorcycle or other similar motor vehicle at the request of the owner, shall have a lien upon and may retain possession of any such accessory, fitting or part until the charges have been paid. If such debt remains unpaid for 6 months or more any garageman or repairshop proprietor may sell such detached accessory, fitting or part at private auction or public sale, and the proceeds, after first paying the expenses of sale, shall be applied in payment of the debt, the balance, if any, to be paid over to the county clerk of the county where the sale is held in trust for the debtor.

### WYOMING

Mechanics have liens upon articles which they have improved by their labor.

have been confined to three makes. He has also made shipment of thirty Federal and Indiana trucks. Trucks already put in service in Japan have strengthened the movement for better roads.

### Madison Motors Merges with Bull Tractor

INDIANAPOLIS, Aug. 28—The Madison Motors Corp., which was formed in 1915, has merged with the Bull Tractor

### Seattle Sees Tractors Work

SEATTLE, Aug. 31—A big tractor demonstration was staged by Washington distributors at East Stanwood. Eleven types of tractors were shown before a crowd of 2000 farmers.

## Coming Events

### Tractor Demonstrations

Hartford, Conn.....	State Fair, Will F. Landon, Sec.....	Sept. 2-6
Medina, Orleans Co., N. Y. ....	State Fair Food Commission. L. J. Steele. ....	Sept. 5
Syracuse, N. Y.....	State Fair, J. Dan Ackerman, Secy.....	Sept. 9-14
Madison, Wis.....	State Fair. O. E. Remy, State Fair Secretary.....	Sept. 9-15
Canada .....	Tractor show .....	Sept. 17-18-19
Riverhead, L. I.....	County Fair, Harry Lee, Secy.....	Sept. 17-20
Trenton, N. J.....	Trenton Fair, Harry B. Salter, Supt.....	Sept. 30-Oct. 4

### Shows

Detroit, Mich. ....	Automobile exhibits.....	Aug. 30-Sept. 8
Indianapolis, Ind.....	Automotive Show, Indiana State.....	Sept. 2-7
	Fair, Indianapolis Automobile Trade Association; John Orman, Manager.	
Greeley, Weld Co., Col....	Tractor show .....	Sept. 8-20
	Central Community Fair.	
Chicago, Ill.....	Automotive and Accessories.....	Sept. 14-21
	War Exposition, Municipal Pier. H. V. Buelow, Managing Director.	
Dallas, Tex. ....	Seventh Annual Automobile Show.....	Oct. 14-17
	Texas State Fair.	
Dallas, Tex. ....	Seventh Annual Texas Automobile Show.....	Oct. 14-27
	Texas State Fair.	

### Conventions

Cincinnati, O. ....	District Convention, Ohio.....	Sept. 11
	Automobile Trade Association.	
Chicago, Ill. ....	Convention and Automotive Equipment Exhibit.....	Oct. 28-Nov. 2
	National Association of Automobile Accessory Jobbers.	

# Passenger Cars

# MOTOR WORLD GUIDE

# Passenger Cars

This table appears in the first issue every month. It is corrected every month and brought up to date.

MAKE AND MODEL	Price	No. of Cylinders	Bore and Stroke, Inches	S.A.E. H.P.	Piston Displacement Cubic Inches	High Gear Ratio	Make of Engine	Cylinder Shape	Camshaft Drive	Water Circulation	LUBRICATION		ELECTRIC SYSTEM		IGNITION		CARBU-RETION		TRANSMISSION				RUNNING GEAR					BEARINGS							
											System	Type of Pump	Make	Voltage	Make	Plug	Make of Carburetor	Fuel Feed	Clutch Type	Location	Forward	Make	Final Drive	Car Drives Through	Rear Axle Type	Make of Rear Axle	Torque Taken By	Wheelbase	Tires	Rims	Wheels	Rear Springs	Make of Speedometer	Number Crankshaft Bearings	Gearset
Abbott.....	6-62 \$1595	6	3 1/2 x 5 1/2	29.4	303.1	4.30-1	Cont.	L	H	P	P	P. Remy-2	6	Remy	%	Stubb	V.P.	D	Unit M.	3	Muncie	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	122	34x4	SS	Wd.	S.E.	Stewart	3 B.	RR	R.
Allen.....	41 1195	4	3 1/2 x 5	22.5	220.9	4.25-1	Own	L	H	P	P	P. A-Lite-2	6	Cont.	%	Stubb	V.P.	D	Unit M.	3	Own	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	112	32x4	SS	Wd.	S.E.	Stewart	2 BR	RR	B.
American.....	B 1595	6	3 1/2 x 5	23.4	230.1	4.42-1	Rutab.	L	H	P	P	P. West-2	6	A. Kent	%	Stubb	V.P.	D	Unit M.	3	G. Lees	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	122	32x4	SS	Wd.	S.E.	Stewart	3 BR	RR	B.
Anderson.....	20 1465	6	3 1/2 x 5	25.3	234.0	4.58-1	Cont.	L	H	P	P	P. West-2	6	Bosch	%	Stubb	V.P.	D	Unit M.	3	Detroit	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	120	33x4	SS	Wd.	S.E.	Stewart	3 BR	RR	B.
Apperson.....	400-F 1925	6	3 1/2 x 5 1/2	29.4	303.1	4.58-1	Cont.	L	H	P	P	P. West-2	6	Bosch	%	Stubb	V.P.	D	Unit M.	3	Own	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	130	33x4	SS	Wd.	S.E.	Stewart	3 B.	RR	R.
Apperson.....	8-18 2500	8	3 1/2 x 5	33.8	331.8	4.25-1	Own	L	H	P	P	P. Bujur-2	6	Bosch	%	Stubb	V.P.	D	Unit M.	3	Own	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	130	34x4	SS	Wd.	S.E.	Stewart	3 B.	RR	R.
Apperson & Co. Ann Arbor.....	3500	6	3 1/2 x 4 1/2	25.3	224.0	4.42-1	Cont.	L	H	P	P	P. Remy-2	6	Remy	%	Stubb	V.P.	D	Unit M.	3	G. Lees	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	120	34x4	SS	Wd.	S.E.	Stewart	3 B.	RR	B.
Auburn.....	6-39 1445	6	3 1/2 x 4 1/2	29.4	303.1	4.08-1	Cont.	L	H	P	P	P. Delco-2	6	Delco	%	Stubb	V.P.	D	Unit M.	3	G. Lees	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	131	35x4	SS	Wd.	S.E.	Stewart	3 B.	RR	R.
Austin.....	6-44 3755	12	2 1/2 x 5	39.7	389.5	3.75-1	Widly	L	H	P	P	P. Delco-2	6	Delco	%	Stubb	V.P.	D	Unit M.	3	Muncie	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	142	34x4	SS	Wd.	S.E.	Stewart	3 B.	RR	R.
Bell.....	18 1150	4	3 1/2 x 4 1/2	22.5	187.7	4.50-1	G.B.A.S.	L	C	T	P	P. Dyno-2	6	A. Kent	%	Stubb	V.P.	D	Unit M.	3	Covert	Bevl.	Bevl.	Bevl.	F. Adams	Springs	114	31x4	C	Wd.	Cant.	Stewart	3 B.	RR	B.
Biddle.....	H 2750	4	3 1/2 x 5 1/2	22.5	226.4	4.40-1	Buda	L	H	P	P	P. G.D-2	6	Esann	%	Stubb	V.P.	D	Unit M.	3	Covert	Bevl.	Bevl.	Bevl.	F. Adams	Springs	121	32x4	QD	Wd.	S.E.	Warner	3 BR	RR	B.
Bour-Davis.....	18A 1680	4	3 1/2 x 5 1/2	22.5	220.0	4.00-1	Cont.	L	H	P	P	P. G. West	6	West	%	Stubb	V.P.	D	Unit M.	3	Detroit	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	118	32x4	QD	Wd.	S.E.	VanS	3 BR	RR	B.
Bour-Davis.....	18B 1785	6	3 1/2 x 5 1/2	29.4	303.0	4.07-1	Cont.	L	H	P	P	P. G. West	12	Bosch	%	Stubb	V.P.	D	Unit M.	3	Detroit	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	118	33x4	SS	Wd.	S.E.	VanS	3 B.	RR	R.
Brewster.....	Chassis 5500	4	4 1/2 x 5 1/2	25.6	276.0	4.23-1	Own	K	C	P	P	P. U.S.L.	6	West	%	Stubb	V.P.	D	Unit M.	3	Own	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	125	34x4	SS	Wd.	S.E.	Stewart	3 B.	RR	R.
Briscoe.....	B-24 825	4	3 1/2 x 4 1/2	16.3	163.0	4.23-1	Own	L	H	P	P	P. A-Lite	6	Cont.	%	Stubb	V.P.	D	Unit M.	3	Own	Bevl	Bevl	Bevl	F. Adams	Springs	104	30x3	C	Wd.	ELL	Stewart	2 BR	RR	B.
Buck.....	E-4-34, E-4-35 795	4	3 1/2 x 4 1/2	18.2	170.0	4.08-1	Own	L	H	P	P	P. Delco-1	6	Delco	%	Stubb	V.P.	D	Unit M.	3	Own	Bevl	Bevl	Bevl	F. Adams	Springs	106	31x4	C	Wd.	S.E.	Stewart	3 BR	RR	B.
Buck.....	E-6-44-45 1265	6	3 1/2 x 4 1/2	27.3	242.0	4.08-1	Own	L	H	P	P	P. Delco	6	Delco	%	Stubb	V.P.	D	Unit M.	3	Own	Bevl	Bevl	Bevl	F. Adams	Springs	118	34x4	SS	Wd.	Cant.	Stewart	4 B.	RR	R.
Buck.....	E-6-49 1495	6	3 1/2 x 4 1/2	27.3	242.0	4.61-1	Own	L	H	P	P	P. Delco	6	Delco	%	Stubb	V.P.	D	Unit M.	3	Own	Bevl	Bevl	Bevl	F. Adams	Springs	124	34x4	SS	Wd.	Cant.	Stewart	4 B.	RR	R.
Cadillac.....	57 3220	8	3 1/2 x 5 1/2	31.2	314.0	4.43-1	Own	L	C	P	P	P. Delco-1	6	Delco	%	Stubb	V.P.	D	Unit M.	3	Own	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	125	35x5	SS	Wd.	Plat.	VanS	3 BR	RR	R.
Case.....	U 1675	6	3 1/2 x 4 1/2	25.3	224.0	4.75-1	Own	L	C	T	P	P. West-2	6	West	%	Stubb	V.P.	D	Unit M.	3	G. Lees	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	117	32x4	SS	Wd.	S.E.	Stewart	3 BR	RR	R.
Chalmers.....	6-30 1615	6	3 1/2 x 4 1/2	25.3	224.0	4.75-1	Own	L	C	T	P	P. West-2	6	Remy	%	Stubb	V.P.	D	Unit M.	3	G. Lees	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	117	32x4	SS	Wd.	S.E.	Stewart	3 BR	RR	R.
Chandler.....	1795	6	3 1/2 x 5	29.4	280.0	4.40-1	Own	L	C	P	P	P. West	6	Bosch	%	Stubb	V.P.	D	Unit M.	3	Own	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	123	34x4	SS	Wd.	S.E.	Stewart	3 B.	RR	R.
Cherrollet.....	490 1735	4	3 1/2 x 4 1/2	21.7	171.0	3.65-1	Own	L	C	P	P	P. A-Lite-2	6	Remy	%	Stubb	V.P.	D	Unit M.	3	Own	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	102	30x4	C	Wd.	Cant.	Stewart	3 BR	RR	C&C
Cherrollet.....	FA 905	8	3 1/2 x 5 1/2	21.7	224.0	4.25-1	Own	L	H	P	P	P. A-Lite-2	6	Remy	%	Stubb	V.P.	D	Unit M.	3	Own	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	108	33x4	SS	Wd.	Cant.	Stewart	3 BR	RR	C&C
Cole.....	D4 & D5 1585	8	3 1/2 x 5 1/2	36.4	286.9	4.45-1	Own	L	H	P	P	P. Delco-2	6	Delco	%	Stubb	V.P.	D	Unit M.	3	Own	Bevl	Bevl	Bevl	F. Adams	Springs	120	34x4	SS	Wd.	Cant.	Stewart	3 BR	RR	R.
Cole.....	870 2595	8	3 1/2 x 5 1/2	39.2	346.4	4.45-1	North	L	H	P	P	P. Delco-2	6	Delco	%	Stubb	V.P.	D	Unit M.	3	North	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	127	33x5	SS	Wd.	S.E.	Warner	3 B.	RR	R.
Columbia.....	C & D 1550	6	3 1/2 x 4 1/2	25.3	224.0	4.75-1	Cont.	L	H	P	P	P. W. Low	6	A. Kent	%	Stubb	V.P.	D	Unit M.	3	Warner	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	115	32x4	SS	Wd.	S.E.	Stewart	3 B.	RR	R.
Comet.....	C-51 1685	6	3 1/2 x 4 1/2	29.4	303.1	4.45-1	Cont.	L	H	P	P	P. Dyno-2	6	Delco	%	Stubb	V.P.	D	Unit M.	3	Warner	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	125	33x4	SS	Wd.	S.E.	Stewart	3 B.	RR	R.
Commonwealth.....	4-40 1095	4	3 1/2 x 4 1/2	19.6	192.0	4.00-1	Lyong.	L	H	P	P	P. Dyno-2	6	Bosch	%	Stubb	V.P.	D	Unit M.	3	Mech	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	115	32x3	SS	Wd.	ELL	VanS	3 B.	RR	R.
Crawford.....	6-40 2500	6	3 1/2 x 4 1/2	29.4	303.0	4.08-1	Cont.	L	H	P	P	P. West-2	6	Bosch	%	Stubb	V.P.	D	Unit M.	3	Own	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	122	32x4	SS	Wd.	ELL	Stewart	3 B.	RR	R.
Crow-Ellhart.....	CE-35 1095	4	3 1/2 x 4 1/2	19.6	192.0	4.25-1	Own	L	H	P	P	P. Dyno-2	6	Delco	%	Stubb	V.P.	D	Unit M.	3	Covert	Bevl	Bevl	Bevl	F. Adams	Springs	115	32x3	SS	Wd.	S.E.	Stewart	3 B.	RR	C&C
Cunningham.....	V 1600	8	3 1/2 x 5	45.0	442.0	3.50-1	Own	L	H	P	P	P. West-2	6	Delco	%	Stubb	V.P.	D	Unit M.	3	B-Lips	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	132	35x5	SS	Wd.	ELL	Stewart	3 BR	RR	R.
Daniels.....	B 3500	8	3 1/2 x 5	33.8	331.8	4.45-1	Her-Sp.	L	H	P	P	P. West-2	6	West	%	Stubb	V.P.	D	Unit M.	3	B-Lips	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	127	34x4	SS	Wd.	S.E.	Warner	3 BR	RR	R.
Davis.....	H, I, L 1685	6	3 1/2 x 4 1/2	25.3	224.0	4.58-1	Cont.	L	C	P	P	P. Delco-2	6	Delco	%	Stubb	V.P.	D	Unit M.	3	Warner	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	125	34x4	SS	Wd.	S.E.	Stewart	3 BR	RR	R.
Davis.....	J & M 2050	6	3 1/2 x 4 1/2	29.4	303.0	4.42-1	Cont.	L	H	P	P	P. Dyno-2	6	Delco	%	Stubb	V.P.	D	Unit M.	3	Warner	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	125	34x4	SS	Wd.	S.E.	Stewart	3 BR	RR	R.
Dixie Flyer.....	I.S-35 1095	4	3 1/2 x 4 1/2	16.9	165.9	4.75-1	Lyong.	L	H	P	P	P. Dyno-2	6	Cont.	%	Stubb	V.P.	D	Unit M.	3	G. Lees	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	115	32x3	SS	Wd.	ELL	VanS	2 BR	RR	B.
Dodge Brothers.....	D 985	4	3 1/2 x 4 1/2	24.0	212.3	4.17-1	Own	L	C	P	P	P. Wagn-2	12	Double	%	Stewart	V.D.	D	Unit M.	3	S	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	114	32x3	SS	Wd.	ELL	Waltham	3 BR	RR	R.
Dorris.....	6-80 925	6	4 1/2 x 5	38.4	377.0	3.50-1	Own	L	C	P	P	P. G. N-East-1	12	N-East	%	Stewart	V.D.	D	Unit M.	3	Own	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	132	35x5	SS	Wd.	ELL	J.M.	3 BR	RR	R.
Dort.....	11 2000	8	3 1/2 x 5	33.8	331.8	4.42-1	Her-Sp.	L	H	P	P	P. West-2	6	Bosch	%	Stubb	V.P.	D	Unit M.	3	Own	Sp. B.	Sp. B.	Sp. B.	F. Adams	Springs	122	34x4	SS	Wd.	S.E.	Warner	7 BR	RR	R.
Douglas.....	11 2000	8	3 1/2 x 5	33.8.																															

4	51x24	44.1	584.0	2.78-1	1.0wn	L. S.	C. S.	P. Sp-Pr	G. West-2	8	Boech.	1/2	Own	P. D.	Anid.	Unit M.	4	Own	Sp. B.	Tor. T.	S. F.	Own	Tor. T.	100	35x5	QD.	S-E.	Stewart.	8	P.	B.	B.
4	31x4	22.5	176.7	3.04-1	1.0wn	L. S.	C. S.	P. Sp-Gr	G. Dynto-1	12	A. Kent.	1/2	Own	V. D.	Anid.	Unit M.	3	Own	Sp. B.	Spring.	S. F.	Own	Tor. T.	140	30x34	C.	Wd.	Stewart.	7	B.	B.	B.
6	31x4	25.3	199.1	4.33-1	1.0wn	I. H.	H.	A. Pr.	G. Dynto-1	12	A. Kent.	1/2	Own	V. D.	Anid.	Unit M.	3	Own	Sp. B.	Spring.	S. F.	Own	Tor. T.	140	30x34	SS.	Wd.	Stewart.	3	B.	B.	B.
4	41x24	33.8	445.0	3.00-1	1.0wn	L. C.	C.	P. Sp-Pr	P. Boech-2	6	Conn.	1/2	Conn.	V. D.	Anid.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Tor. T.	140	30x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	West.	1/2	West.	V. D.	Unit M.	Unit M.	3	Own	Sp. B.	Spring.	S. F.	W. Weiss	Spring.	119	34x44	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	21.6	180.2	4.50-1	1.0wn	L. H.	H.	P. Sp-Pr	P. Wagon-2	6	Remy.	1/2	Remy.	V. D.	Unit M.	Unit M.	3	Own	Sp. B.	Spring.	S. F.	W. Weiss	Spring.	114	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
4	31x4	22.5	187.7	4.00-1	1.0wn	L. C.	C.	P. Sp-Pr	P. Dynto-1	6	Conn.	1/2	Conn.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.	B.	B.
6	31x5	23.4	230.1	4.64-1	1.0wn	L. H.	H.	P. Sp-Pr	P. West-2	6	A. Kent.	1/2	A. Kent.	V. D.	Unit M.	Unit M.	3	G. Lees.	Bevl.	Spring.	S. F.	W. Weiss	Spring.	112	32x34	SS.	Wd.	Stewart.	3	B.		



## PASSENGER CARS—Continued

MAKE AND MODEL	Price	No. of Cylinders	Bore and Stroke, Inches	S.A.E. H.P.	Piston Displacement	High Gear Ratio	Make of Engine	Cylinder Shape	Camshaft Drive	Water Circulation	LUBRICATION		ELECTRIC SYSTEM		IGNITION		CARBURETION		TRANSMISSION				RUNNING GEAR				BEARINGS										
											System	Type of Pump	Make	Voltage	Make	Plug	Make of Carburetor	Fuel Feed	Clutch Type	Location	Forward Speeds	Make	Final Drive	Car Drives Through	Rear Axle Type	Make of Rear Axle	Torque Taken By	Wheelbase	Tire	Rims	Wheels	Rear Springs	Make of Speedometer	Number Crankshaft Bearings	Gearset	Rear Axle	From Wheel
Oakland	34-B \$1185	6	2 1/4 x 4 1/4	19.0	177.0	4.50-1	Own	L	H	P	Pr	G	Remy-2	6	Remy-2	%	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	F	West M.	Springs	112	32 1/4	SS	Wd	S.E.	Stewart	3	3 Bp.	B.
Oldsmobile	37 1395	6	2 1/4 x 4 1/4	19.0	177.0	4.58-1	North	L	H	P	Pr	G	Remy-2	6	Remy-2	%	Johnson	V. C.	Unit M.	Unit M.	3	North	Sp. B.	Sp. B.	Sp. B.	F	West M.	Springs	112	32 1/4	SS	Wd	S.E.	Stewart	3	3 Bp.	B.
Oldsmobile	45-A 1700	6	2 1/4 x 4 1/4	26.4	246.7	4.92-1	Own	L	H	P	Pr	G	Delco	6	Delco	%	Ball	V. C.	Unit M.	Unit M.	3	Own	Sp. B.	Sp. B.	Sp. B.	F	West M.	Springs	120	34 1/4	SS	Wd	S.E.	Stewart	3	3 Bp.	B.
Olympian	9-C 895	4	3 1/4 x 4 1/4	16.9	149.3	4.75-1	Own	L	H	P	Pr	G	A-Lite-2	6	Conn.	%	Stnbg.	V. C.	Unit X	Unit X	3	Own	Sp. B.	Sp. B.	Sp. B.	F	Own	Rad Rd	106	31 1/4	C	Opt. Trans	Stewart	2	2 Bp.	B.	
Overyland	85-B 1025	4	3 1/4 x 4 1/4	18.2	178.9	3.93-1	Own	L	H	P	Pr	G	A-Lite-2	6	Conn.	%	Tillen	V. C.	Unit X	Unit X	3	Own	Sp. B.	Sp. B.	Sp. B.	F	Own	Rad Rd	106	31 1/4	C	Opt. Trans	Stewart	2	2 Bp.	B.	
Overyland	85-B 1200	4	3 1/4 x 4 1/4	27.2	240.5	4.00-1	Cont.	L	H	P	Pr	G	A-Lite-2	6	Conn.	%	Tillen	V. C.	Unit X	Unit X	3	Own	Sp. B.	Sp. B.	Sp. B.	F	Own	Rad Rd	106	31 1/4	C	Opt. Trans	Stewart	2	2 Bp.	B.	
Overyland	85-B 1300	4	3 1/4 x 4 1/4	25.3	224.0	4.00-1	Cont.	L	H	P	Pr	G	A-Lite-2	6	Conn.	%	Tillen	V. C.	Unit X	Unit X	3	Own	Sp. B.	Sp. B.	Sp. B.	F	Own	Rad Rd	106	31 1/4	C	Opt. Trans	Stewart	2	2 Bp.	B.	
Oven Magnetic	W-42 5300	6	4 x 5 1/2	38.4	414.7	4.08-1	Own	L	H	P	Pr	G	West-2	24	Bosch	%	Zenith	V. Om	Unit M.	Unit M.	3	Magnetic	Sp. B.	Sp. B.	Sp. B.	F	Amer.	Springs	142	35 1/4	SS	Wd	S.E.	Warner	3	3 Bp.	B.
Oven Magnetic	M-25 3300	6	4 x 5 1/2	29.4	303.1	4.08-1	Cont.	L	H	P	Pr	G	West-2	28	Bosch	%	Zenith	V. Om	Unit M.	Unit M.	3	Magnetic	Sp. B.	Sp. B.	Sp. B.	F	Amer.	Springs	126	34 1/4	SS	Wd	S.E.	Warner	3	3 Bp.	B.
Oven Magnetic	O-36 3950	6	4 x 5 1/2	33.6	364.5	3.50-1	Buda	L	H	P	Pr	G	West-2	28	Bosch	%	Zenith	V. Om	Unit M.	Unit M.	3	Magnetic	Sp. B.	Sp. B.	Sp. B.	F	Amer.	Springs	136	35 1/4	SS	Wd	S.E.	Warner	3	3 Bp.	B.
Packard	3-25 4300	12	3 x 5	43.2	424.1	4.36-1	Own	L	C	P	Pr	G	Biur-2	6	Delco	%	Own	P. D.	Unit M.	Unit M.	3	Own	Sp. B.	Sp. B.	Sp. B.	F	Own	Tor. A.	128	35 1/4	SS	Wd	S.E.	Waltham	3	3 Bp.	B.
Packard	3-35 4600	12	3 x 5	22.4	230.1	4.41-1	Rutnhr.	L	H	P	Pr	G	G&D-2	6	Remy	%	Stnbg.	V. C.	Unit M.	Unit M.	3	Own	Sp. B.	Sp. B.	Sp. B.	F	Salsbury	Tor. T.	117	32 1/4	SS	Wd	Cant.	Stewart	3	3 Bp.	B.
Packard	6-55 1985	6	3 1/2 x 5 1/2	29.4	246.7	4.35-1	Cont.	L	H	P	Pr	G	G&D	6	Remy	%	Stnbg.	V. C.	Unit M.	Unit M.	3	Own	Sp. B.	Sp. B.	Sp. B.	F	Salsbury	Tor. T.	117	32 1/4	SS	Wd	Cant.	Stewart	3	3 Bp.	B.
Pan-American	G-5 1800	6	3 1/2 x 5 1/2	23.4	230.0	4.45-1	Rutnhr.	L	H	P	Pr	G	Delco	6	G&D	%	Stnbg.	V. C.	Unit M.	Unit M.	3	Warner	Sp. B.	Sp. B.	Sp. B.	F	Timken	Springs	120	33 1/4	SS	Wd	S.E.	Stewart	3	3 Bp.	B.
Pan-American	6-16 1955	6	3 1/2 x 5 1/2	33.8	331.8	4.90-1	Own	L	H	P	Pr	G	A-Lite-2	6	Delco	%	Stnbg.	V. C.	Unit M.	Unit M.	3	Own	Sp. B.	Sp. B.	Sp. B.	F	Timken	Springs	120	33 1/4	SS	Wd	S.E.	Stewart	3	3 Bp.	B.
Pearless	56 2550	6	3 1/2 x 5 1/2	38.4	414.7	3.75-1	Own	L	H	P	Pr	G	West-2	6	Bosch	%	Stnbg.	V. C.	Unit M.	Unit M.	3	Own	Sp. B.	Sp. B.	Sp. B.	F	Timken	Springs	124	35 1/4	SS	Wd	Plat	Warner	3	3 Bp.	B.
Pierce-Arrow	C-1 4500	6	4 x 5 1/2	48.6	524.8	3.58-1	Own	L	H	P	Pr	G	West-2	6	Bosch	%	Stnbg.	V. C.	Unit M.	Unit M.	3	Own	Sp. B.	Sp. B.	Sp. B.	F	Timken	Springs	124	35 1/4	SS	Wd	Plat	Warner	3	3 Bp.	B.
Pierce-Arrow	B-1 5500	6	4 x 5 1/2	48.6	524.8	3.58-1	Own	L	H	P	Pr	G	West-2	6	Bosch	%	Stnbg.	V. C.	Unit M.	Unit M.	3	Own	Sp. B.	Sp. B.	Sp. B.	F	Timken	Springs	124	35 1/4	SS	Wd	Plat	Warner	3	3 Bp.	B.
Pierce-Arrow	A-1 6500	6	5 x 7	60.0	824.7	2.98-1	Own	L	H	P	Pr	G	West-2	6	Bosch	%	Stnbg.	V. C.	Unit M.	Unit M.	3	Own	Sp. B.	Sp. B.	Sp. B.	F	Timken	Springs	124	35 1/4	SS	Wd	Plat	Warner	3	3 Bp.	B.
Pilot	6-45 1395	6	3 1/2 x 5 1/2	22.4	230.1	4.25-1	T-Hart	L	H	P	Pr	G	Delco-2	6	Delco	%	Tillen	V. C.	Unit M.	Unit M.	3	Munroe	Sp. B.	Sp. B.	Sp. B.	F	Hess	Tor. A.	147	36 1/4	SS	Wd	Plat	Warner	3	3 Bp.	B.
Pilot	6-57 2200	6	3 1/2 x 5 1/2	22.4	230.1	4.45-1	Own	L	H	P	Pr	G	Delco-2	6	Delco	%	Johnson	V. P.	Unit M.	Unit M.	3	Detroit	Sp. B.	Sp. B.	Sp. B.	F	Timken	Springs	124	35 1/4	SS	Wd	S.E.	Warner	3	3 Bp.	B.
Princess	36-F 875	4	3 1/2 x 4 1/2	22.5	187.7	4.25-1	G.B.&S.	L	C	T	Pr	G	Disco-2	6	Splitdrf	%	Schblr	V. D.	Unit M.	Unit M.	3	G-Lees	Sp. B.	Sp. B.	Sp. B.	F	Own	Springs	108	32 3/4	SS	Wd	Ell	VanS	3	3 Bp.	B.
Regal	J 795	4	3 1/2 x 4 1/2	19.6	182.8	4.25-1	Own	L	H	T	Pr	G	A-Lite	6	A-Kent	%	Carier	V. C.	Unit M.	Unit M.	3	G-Lees	Bevel	Sp. B.	Sp. B.	F	Peru	Tor. T.	108	30 3/4	QD	Wd	Cant	Stewart	3	3 Bp.	B.
Reo	T 1295	6	4 1/2 x 5 1/2	27.2	240.5	4.30-1	Own	L	H	T	Pr	G	Remy-2	6	Remy	%	Johnson	V. D.	Unit M.	Unit M.	3	Own	Sp. B.	Sp. B.	Sp. B.	F	Own	Tor. T.	120	34 1/4	SS	Wd	S.E.	Stewart	3	3 Bp.	B.
Reo	M 1550	6	4 1/2 x 5 1/2	30.4	306.6	4.30-1	Own	L	H	T	Pr	G	Remy-2	6	Remy	%	Johnson	V. D.	Unit M.	Unit M.	3	Own	Sp. B.	Sp. B.	Sp. B.	F	Own	Tor. A.	126	34 1/4	SS	Wd	Cant	Stewart	3	3 Bp.	B.
Revere	3850	4	4 x 6	20.6	360.0	3.00-1	Own	L	S	P	Pr	G	Biur	6	Bosch	%	Miller	P. D.	Unit M.	Unit M.	3	G-Lees	Sp. B.	Sp. B.	Sp. B.	F	Hess	Tor. A.	131	32 1/4	QD	Wd	S.E.	Stewart	3	3 Bp.	B.
Roamer	D-475 3250	4	4 x 6	20.6	301.6	3.77-1	Dunsbrg	L	H	P	Pr	G	Biur	6	Bosch	%	Stnbg.	V. P.	Unit M.	Unit M.	3	G-Lees	Sp. B.	Sp. B.	Sp. B.	F	Hess	Tor. A.	128	32 1/4	SS	Wd	S.E.	Stewart	3	3 Bp.	B.
Roamer	C-6-54 2475	6	3 1/2 x 5 1/2	29.4	303.1	3.77-1	Cont	L	H	P	Pr	G	Biur	6	Bosch	%	Stnbg.	V. P.	Unit M.	Unit M.	3	G-Lees	Sp. B.	Sp. B.	Sp. B.	F	Hess	Tor. A.	128	32 1/4	SS	Wd	S.E.	Stewart	3	3 Bp.	B.
Saxon	S-4 1045	6	2 1/2 x 4 1/2	18.8	175.3	4.75-1	Cont.	L	H	T	Pr	G	Wagur-2	6	Delco	%	Stnbg.	V. P.	Unit X	Unit X	3	Own	Sp. B.	Sp. B.	Sp. B.	F	Timken	Tor. T.	112	32 3/4	SS	Wd	Cant	Stewart	3	3 Bp.	B.
Saxya	Six-42 1495	6	3 1/2 x 4 1/2	25.3	224.0	4.75-1	Cont.	L	H	T	Pr	G	Delco	6	Delco	%	Stnbg.	V. P.	Unit X	Unit X	3	Own	Sp. B.	Sp. B.	Sp. B.	F	Hess	Tor. T.	112	32 3/4	SS	Wd	S.E.	Stewart	3	3 Bp.	B.
Scripps-Booth	Six-39 1195	6	2 1/2 x 4 1/2	19.0	177.0	4.5-1	North	L	H	T	Pr	G	Remy-2	6	Remy	%	Marvel	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	F	West M.	Springs	112	3 1/4	SS	Wd	S.E.	Stewart	3	3 Bp.	B.
Scripps-Booth	Six-G 835	4	3 1/2 x 4 1/2	21.7	171.0	4.07-1	Mason	L	H	T	Pr	G	Remy-2	6	Remy	%	Zenith	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	F	West M.	Springs	110	30 3/4	C	Opt. Cant	Stewart	3	3 Bp.	B.	
Scripps-Booth	D 1285	6	2 1/2 x 4 1/2	22.0	162.0	3.69-1	Ferro	L	H	T	Pr	G	Remy-2	6	Remy	%	Zenith	V. C.	Unit M.	Unit M.	3	Warner	Bevel	Sp. B.	Sp. B.	F	West M.	Springs	120	32 1/4	SS	Wd	Cant	Stewart	3	3 Bp.	B.
Simplex	V 7000	6	4 1/2 x 5 1/2	45.9	563.7	3.00-1	Own	L	H	T	Pr	G	Bosch-2	6	Remy	%	Newmh	V. D.	Unit M.	Unit M.	3	Own	Sp. B.	Sp. B.	Sp. B.	F	Own	Springs	143	37 1/4	SS	Wd	S.E.	Stewart	3		



Lamp  
Bulbs

## MOTOR WORLD GUIDE

Lamp  
Bulbs

Car and Model	HEAD LAMPS	SIDE LAMPS	TAIL LAMP	DASH LAMP	Fuses Amp.	Wiring System	Type of Dimmer	Remarks
Abbott-Detroit...	6-8 15	6-8 4H	6-8 2	6-8 2	15	E.S.	D. Bulb.	Dash lamp Ediswan D.
Allen...	6-8 18	6-8 4	6-8 2	6-8 2	15	E.S.	Holms.	Spotlight, 7 v., 21 cp., double contact.
American...	6-8 15	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Tonneau & Steplights 6-8 v., 4 cp.
Anderson...	6-8 21	6-8 12H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Ediswan D.
Apperson...	6-8 18	6-8 4	6-8 2	6-8 2	25	E.S.	Resist.	Dash lamp Ediswan D.
Auburn 39 B...	6-8 15	6-8 12	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Auburn 44...	6-8 24	6-8 4H	6-8 2	6-8 2	10	E.S.	Series.	Dash lamp Ediswan D.
Austin...	6-8 18	6-8 4H	6-8 2	6-8 2	10	E.S.	Resist.	Dash lamp Ediswan D.
Ball...	6-8 18	6-8 4H	6-8 2	6-8 2	15	E.S.	Warner lens.	Dash lamp Ediswan D.
Biddle...	6-8 21	6-8 4H	6-8 2	6-8 2	10	E.S.	Resist.	Dash lamp Ediswan D.
Brewster...	12-16 40	12-16 4H	6-8 2	6-8 2	20	E.S.	Warner lens.	Dash lamp Ediswan D.
Briscoe...	6-8 21	6-8 4H	6-8 2	6-8 2	20	E.S.	Resist.	Dash lamp Ediswan D.
Bur Davis...	6-8 15	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Buck...	6-8 15	6-8 4H	6-8 2	6-8 2	10	E.S.	Resist.	Dash lamp Ediswan D.
Cadillac...	6-8 18	6-8 6	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Case...	6-8 18	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Chalmers...	6-8 15	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Chandler...	6-8 18	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Chevrolet...	6-8 12	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Chevrolet...	6-8 15	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Chevrolet...	6-8 15	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Cole...	6-8 21	6-8 4	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Columbia...	6-8 15	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Commonwealth...	6-8 15	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Crawford...	6-8 15	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Crow-Ellhart...	6-8 15	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Cunningham...	6-8 15	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Daniels...	6-8 18	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Davis...	6-8 15	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Dixie Flyer...	6-8 15	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Dodge...	12-16 32	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Dodge Brothers...	12-16 15	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Dodge...	6-8 15	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Derr...	6-8 15	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Detroit...	6-8 15	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Elgin...	6-8 21	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Elcar...	6-8 15	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Empire...	6-8 15	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Fiat...	6-8 15	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Ford...	6-8 15	6-8 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
Franklin...	9 12-16 21	12-16 4H	6-8 2	6-8 2	10	E.S.	Warner lens.	Dash lamp Ediswan D.
F. R. P. 45-B...	12-16 25	12-16 6	12-16 3	12-16 3	6-3	E.S.	Legalite lens.	Panel 12-16 v., 2 cp.
Gladiator...	6-8 15	6-8 4H	6-8 2	6-8 2	15	E.S.	D. Bulb.	Dash lamp Ediswan D.
Grant...	6-8 15	6-8 4H	6-8 2	6-8 2	15	E.S.	D. Bulb.	Dash lamp Ediswan D.
Halladay...	6-8 15	6-8 4H	6-8 2	6-8 2	15	E.S.	D. Bulb.	Dash lamp Ediswan D.
Harrington...	6-8 15	6-8 4H	6-8 2	6-8 2	15	E.S.	D. Bulb.	Dash lamp Ediswan D.
Haynes...	6-8 15	6-8 4H	6-8 2	6-8 2	15	E.S.	D. Bulb.	Dash lamp Ediswan D.
Haynes...	6-8 15	6-8 4H	6-8 2	6-8 2	15	E.S.	D. Bulb.	Dash lamp Ediswan D.
Hollier...	6-8 15	6-8 4H	6-8 2	6-8 2	15	E.S.	D. Bulb.	Dash lamp Ediswan D.
Hudson...	6-8 15	6-8 4H	6-8 2	6-8 2	15	E.S.	D. Bulb.	Dash lamp Ediswan D.
Hupmobile...	6-8 15	6-8 4H	6-8 2	6-8 2	15	E.S.	D. Bulb.	Dash lamp Ediswan D.
Inter-State...	6-8 15	6-8 4H	6-8 2	6-8 2	15	E.S.	D. Bulb.	Dash lamp Ediswan D.
Jackson...	349 6-8	6-8 4H	6-8 2	6-8 2	15	E.S.	D. Bulb.	Dash lamp Ediswan D.
Jones...	27ABC 6-8	6-8 4H	6-8 2	6-8 2	15	E.S.	D. Bulb.	Dash lamp Ediswan D.
Jordan...	5-60 6-8	6-8 4H	6-8 2	6-8 2	15	E.S.	D. Bulb.	Dash lamp Ediswan D.
King...	6-8 18	6-8 4H	6-8 2	6-8 2	15	E.S.	D. Bulb.	Dash lamp Ediswan D.
Kissel...	6-8 18	6-8 4H	6-8 2	6-8 2	15	E.S.	D. Bulb.	Dash lamp Ediswan D.
Kline...	6-38 6-8	6-8 4H	6-8 2	6-8 2	15	E.S.	D. Bulb.	Dash lamp Ediswan D.

ABBREVIATIONS:—C.B.—Circuit Breaker. Candell.—Candelabra. D.—Double wiring system. E.D.—Ediswan double contact. E.S.—Ediswan single contact. H.—Small bulbs in headlamps for city driving. Resist.—Resistance. S.—Single wiring system. Series—Series connection.

Tires  
and Tubes

## MOTOR WORLD GUIDE

Tires  
and Tubes

This table appears in the first issue every month. It is corrected every month and brought up to date.

Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
ACME	Plain Kam Tread Dimple Hemisphere Gray and Red Tubes	17.60	18.90		25.30	s26.30	26.80		s35.10	36.50	37.70	39.00					53.10	54.60	56.30		63.50	65.50	67.50		
		s19.70	s26.60		s26.60	s27.60	28.20		s36.90	38.50	39.70	41.10					q55.90	57.30	59.10	60.80	63.50	65.50	67.50	69.00	
		20.20	29.00		s30.10	s30.80	30.80		s40.40	42.10	43.60	45.00					61.00	62.80	64.70	66.70	69.00	72.90	75.40	77.60	
		s22.20	s23.70		31.90	33.90	33.90	36.00	36.00	s44.60	46.30	48.00	49.40	51.00	52.90		8.95	9.30	9.70	10.20	11.35	11.60	12.30	12.65	
ADVANCE	Plain Non-Skid	s15.40	s16.20		s21.10	s22.20	24.70	s28.80	s32.30	33.00	34.50	35.30	36.50	37.60			47.50	49.70	50.50	52.60	s56.80	s60.10	s60.20		
		s16.20	s17.05		s22.10	s23.40	25.90	s30.20	s33.90	34.60	36.10	37.10	38.10	39.40	39.40		s48.35	50.00	52.10	55.20	s59.50	s63.10	s64.60		
AJAX	Plain Non-Skid Road King Gray Tubes Red Tubes	s15.05	s15.90	20.65	20.45	21.45	24.80	29.65	33.30	33.90	35.30	35.90	37.50	38.00			48.30	50.10	50.70	52.60	57.70	57.75	59.90		
		16.85	17.70		s23.50	24.45	27.85	32.65	36.90	37.50	38.95	39.55	41.15	41.65	41.65		51.90	53.15	54.95	55.55	57.40	62.55	62.60	64.75	87.25
AMAZON	Ribbed Non-Skid Red and Gray Tubes	3.55	3.30	3.75	4.15	4.25	4.40	4.75	5.35	5.55	5.80	5.90	6.05	6.35			7.15	7.25	7.35	7.75	9.25	9.35	9.45	10.10	10.30
		3.85	4.15	4.40	5.05	5.25	5.40	5.65	6.50	6.65	6.90	7.00	7.15	7.40	7.40		8.00	8.85	9.15	9.35	10.90	11.00	11.15	11.95	12.15
AMERICAN	Ribbed or Plain Triple A Non-Skid Seal Brown Tubes Red Indian Tubes Cord Ribbed Cord Plain Tubes	qs18.55	qs19.55	qs20.00	qs24.00	qs27.70	qs29.10	qs32.80	qs38.35	qs39.40	qs40.05	qs40.75					qs54.25	qs56.75	qs60.50	qs63.35			qs73.80		
		qs18.50	qs19.55	qs20.25	qs25.25	qs29.10	qs32.80	qs34.40	qs38.35	qs39.40	qs40.05	qs40.75	qs42.90	qs42.90	qs43.90	qs44.90	qs45.90	qs54.25	qs56.75	qs60.50	qs63.35	qs67.35	qs73.80	qs77.60	qs81.30
ARCHER CORD	Ribbed Tread Pyramid Tread Fabric Plain Fabric Non-Skid Gray Tubes	31.15	33.50	34.25	37.00	39.50	41.00	43.00	47.85	49.10	50.45	53.00					56.75	58.15	59.50	63.50	70.60	74.15	73.90		
		15.20	19.60	20.65	20.65	20.65	20.65	20.65	20.65	20.65	20.65	20.65	20.65	20.65	20.65	20.65	20.65	20.65	20.65	20.65	20.65	20.65	20.65	20.65	20.65
ARMSTRONG	Plain Non-Skid Red Tubes Puncture-Proof Tubes	s22.00	s24.10	4.40	30.80	34.00	37.20	40.40	44.00	47.20	50.40	53.60					56.80	58.00	59.20	60.40	61.60	62.80	64.00	65.20	66.40
		29.50	31.40	33.30	35.20	37.10	39.00	40.90	42.80	44.70	46.60	48.50	50.40	52.30	54.20	56.10	58.00	59.90	61.80	63.70	65.60	67.50	69.40	71.30	73.20
BALTIMORE	Concord Box Tread Tubes Wil-Lox Non-Skid	22.19	24.41	3.25	30.80	34.00	37.20	40.40	44.00	47.20	50.40	53.60					56.80	58.00	59.20	60.40	61.60	62.80	64.00	65.20	66.40
		qs15.98	qs17.05	qs18.12	qs20.65	qs21.87	qs23.09	qs24.31	qs25.53	qs26.75	qs27.97	qs29.19	qs30.41	qs31.63	qs32.85	qs34.07	qs35.29	qs36.51	qs37.73	qs38.95	qs40.17	qs41.39	qs42.61	qs43.83	qs45.05
BATAVIA	Plain Ribbed Security Tread Gray Tubes	qs15.85	qs16.50	3.25	qs20.05	qs21.50	qs23.00	qs24.50	qs26.00	qs27.50	qs29.00	qs30.50	qs32.00	qs33.50	qs35.00	qs36.50	qs38.00	qs39.50	qs41.00	qs42.50	qs44.00	qs45.50	qs47.00	qs48.50	qs50.00
		qs15.80	qs16.50	3.25	qs20.05	qs21.50	qs23.00	qs24.50	qs26.00	qs27.50	qs29.00	qs30.50	qs32.00	qs33.50	qs35.00	qs36.50	qs38.00	qs39.50	qs41.00	qs42.50	qs44.00	qs45.50	qs47.00	qs48.50	qs50.00
BERGOUNGAN	Plain Non-Skid Red Tubes	s16.20	s17.05		s23.05	s24.40	26.70	30.00	33.35	36.70	40.05	43.40	46.75	50.10			53.45	56.80	60.15	63.50	66.85	70.20	73.55	76.90	80.25
		s17.05	s17.90		s24.40	s25.85	28.15	31.50	34.85	38.20	41.55	44.90	48.25	51.60	54.95	58.30	61.65	65.00	68.35	71.70	75.05	78.40	81.75	85.10	88.45
BESAW	BeSaw Non-Skid BeSaw Plain	24.25	20.50		30.30	31.25	32.20	33.15	34.10	35.05	36.00	36.95	37.90	38.85			39.80	40.75	41.70	42.65	43.60	44.55	45.50	46.45	47.40
		20.50	20.50		27.65	28.60	29.55	30.50	31.45	32.40	33.35	34.30	35.25	36.20	37.15	38.10	39.05	40.00	40.95	41.90	42.85	43.80	44.75	45.70	46.65
BOONE	Plain Ribbed Non-Skid Gray Tubes Black Tubes Red Tubes	qs16.00	qs17.55		qs20.45	qs21.55	qs22.65	qs23.75	qs24.85	qs25.95	qs27.05	qs28.15	qs29.25	qs30.35	qs31.45	qs32.55	qs33.65	qs34.75	qs35.85	qs36.95	qs38.05	qs39.15	qs40.25	qs41.35	qs42.45
		qs17.55	qs18.50		qs21.55	qs22.65	qs23.75	qs24.85	qs25.95	qs27.05	qs28.15	qs29.25	qs30.35	qs31.45	qs32.55	qs33.65	qs34.75	qs35.85	qs36.95	qs38.05	qs39.15	qs40.25	qs41.35	qs42.45	qs43.55
BOWERS	Plain Grip Tread Gray Tubes	18.55	19.65		25.40	28.05	29.65	31.70	34.90	36.00	37.60	38.90	41.95	44.05			52.25	54.35	56.45	58.55	60.65	62.75	64.85	66.95	69.05
		20.60	21.70		31.15	32.15	33.15	34.15	35.15	36.15	37.15	38.15	39.15	40.15	41.15	42.15	43.15	44.15	45.15	46.15	47.15	48.15	49.15	50.15	51.15



Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
BRAENDER	Plain	s15.35	s15.75		20.20	s21.40	23.45	26.45	31.00	31.75	33.15	34.00	35.70	36.20	42.75	44.05	45.50	47.55	48.35	50.15	55.75	56.70	59.00	s91.25	s96.50
	Non-Skid Gray Tubes Red Tubes	s17.80 3.30 3.30 4.20	s18.40 3.35 3.35 4.35		23.45 4.15 4.15 5.45	s24.75 4.15 4.25 5.10	27.15 4.40 4.40 5.20	31.00 5.20 5.20 5.90	36.20 5.40 5.40 6.20	38.90 5.70 5.85 6.75	39.75 5.85 6.00 6.90	39.75 5.85 6.00 6.90	41.70 6.25 6.30 7.20	42.35 6.30 6.35 7.25	50.00 7.15 7.20 8.10	51.30 7.25 7.30 8.20	52.25 7.30 7.35 8.25	53.65 7.40 7.45 8.35	55.65 7.45 7.50 8.40	58.70 7.85 7.90 8.80	63.10 8.90 9.00 9.90	69.10 9.25 9.30 10.20	s106.80 12.65 12.65 13.75	s111.90 13.05 13.05 14.15	
BRUNSWICK	Plain	q14.65	q15.80		q18.00	q21.55	q23.50	q26.60	q31.30	q31.95	q33.50	q34.30	q35.55	q35.50	q42.75	q44.05	q45.50	q47.65	q48.35	q50.40	q55.80	q56.70	q59.20		
	Skid-Not Gray Tubes Red Tubes	q17.15 3.30 3.35 3.75	q18.50 3.35 3.35 3.85		q20.05 3.90 3.90 4.60	q25.30 4.00 4.20 4.70	q27.45 4.20 4.60 5.10	q31.20 4.60 5.40 5.90	q36.60 5.40 5.80 6.30	q39.25 5.80 6.00 6.85	q39.00 5.80 6.00 6.85	q39.00 5.80 6.00 6.85	q41.90 6.00 6.30 7.15	q42.55 6.05 6.15 7.00	q49.00 7.15 7.20 8.10	q50.10 7.20 7.25 8.15	q51.60 7.30 7.35 8.25	q53.65 7.40 7.45 8.30	q54.40 7.50 7.55 8.40	q56.40 7.85 7.90 8.70	q60.35 8.95 9.00 9.90	q61.80 9.10 9.15 10.05	q65.25 9.30 9.35 10.25	q69.50 9.60 9.65 10.55	
BULL	Plain	q15.50	q16.10		q19.70	q22.45	24.25	27.65	q31.35	q31.90	q33.75	q34.25	q35.60	q35.60	q42.75	q44.05	q45.50	q47.65	q48.35	q50.40	q55.80	q56.70	q60.35		
	Non-Skid Red Tubes Gray Tubes	q17.40 3.80 3.15	q18.05 4.60 4.75		q20.55 3.80 3.20	q24.55 4.60 4.65	27.15 5.00 4.20	31.00 5.30 4.60	q36.05 5.20 5.55	q38.15 5.55 5.85	q38.80 5.65 5.95	q38.80 5.65 5.95	q40.55 5.75 6.05	q40.55 5.75 6.05	q48.20 6.35 6.40	q49.50 6.45 6.50	q50.95 6.55 6.60	q53.05 6.85 6.90	q53.75 6.95 7.00	q55.80 7.15 7.20	q59.25 8.95 8.95 9.85	q62.70 9.10 9.10 10.00	q65.70 9.30 9.30 10.20	q69.50 9.60 9.60 10.50	q74.00 9.90 9.90 10.80
CAPITOL	Plaid	q15.30	q15.00		q19.70	q20.45	22.90	26.55	q29.85	q30.75	q32.05	q32.65	q33.90	q33.90	q42.75	q44.05	q45.50	q47.65	q48.35	q50.40	q55.80	q56.70	q60.35		
	Non-Skid Redman Tubes Paragon Gray Tubes	q16.35 3.85 3.40	q16.75 3.75 3.35		q20.20 4.60 3.90	q21.65 4.65 4.25	23.90 4.80 5.00	28.40 5.10 5.00	q31.35 5.05 5.20	q32.10 5.15 5.35	q33.45 5.45 5.50	q33.45 5.45 5.70	q35.30 5.70 6.25	q35.30 5.70 6.25	q43.95 6.35 6.40	q44.90 6.45 6.50	q46.20 6.55 6.60	q47.90 6.85 6.90	q49.00 7.00 7.05	q50.65 7.10 7.15	q52.45 7.85 7.85	q55.05 8.80 8.80 9.70	q58.20 9.10 9.10 10.00	q62.25 9.30 9.30 10.20	q66.50 9.60 9.60 10.50
CARLISLE	Lightning Tread Red Tubes						q12.35	5.65	q12.35	5.65													cs100.65	12.90	
CARSPRING	Plain	15.20	15.60	19.00	20.30	21.40	23.65	30.70	31.10	31.70	33.15	33.90	34.90	36.10	42.75	44.05	45.50	47.55	48.35	50.15	55.75	56.70	57.80		
	Non-Skid Gray Tubes Red Tubes	15.95 3.25 3.65	16.40 3.30 3.70		21.25 4.15 4.20	22.40 4.20 4.75	24.70 4.25 4.75	32.15 5.00 5.55	32.65 5.25 5.85	34.80 5.50 6.10	35.65 5.65 6.25	36.65 5.75 6.35	37.95 6.05 6.70	37.95 6.05 6.70	44.55 6.75 7.50	45.85 6.85 7.85	48.00 7.10 7.30	48.00 7.10 7.30	50.20 7.20 7.30	53.10 7.50 7.55	54.25 7.60 7.65	57.50 7.90 8.00	60.70 8.10 8.15	66.80 8.45 8.95	70.70 8.95 9.35
CENTURY-PLAINFIELD	Ribbed Non-Skid Tubes		21.25		25.95		31.20		40.90	42.40	44.25	45.30		51.25	54.00	55.50	57.00	59.00	60.50	70.00	72.50	73.00			
		21.00	22.15		26.95		32.90		42.00	44.60	46.00	46.50		54.00	56.00	58.00	60.00	62.00	64.00	72.00	76.00	77.00	97.25	99.50	
CHAMPION	Non-Skid Gray Tubes Red Tubes	16.40 3.50 3.85	15.85 3.45 3.80		20.65 4.20 4.60	21.80 4.30 4.75	24.25 4.35 4.80	28.15 5.10 5.60	31.75 5.35 5.90	32.30 5.45 6.00	33.70 5.65 6.20	34.55 5.80 6.40	39.40 6.55 7.20	40.50 6.55 7.45	45.05 6.90 7.60	46.60 7.05 7.75	48.60 7.25 7.85	48.60 7.25 7.85	50.60 7.50 8.10	55.55 8.80 9.70	62.90 9.10 10.05	58.80 9.10 10.05			
CLEVELAND-STANDARD	Driving Tread Non-Skid Red Tubes		22.80		28.25		32.80		40.00	41.75	43.00	45.60		51.80	52.70	53.60	55.70	56.95	59.00	64.20	72.80	75.70	73.80		
	Valvetread Ribbed	24.25 4.00 3.65	24.90 4.05 3.70		31.25 4.75 4.35	32.25 5.10 4.75	35.70 5.30 4.85	38.75 5.60 5.75	42.80 6.50 5.95	44.50 6.65 6.10	45.80 6.85 6.25	47.20 7.10 6.45	49.00 7.60 6.90	49.00 7.60 6.90	51.80 8.70 7.85	52.70 8.70 7.85	53.60 8.85 7.95	55.00 8.95 8.10	59.10 9.20 8.30	64.20 9.50 8.65	72.80 10.70 9.95	77.50 11.10 9.95	96.40 12.75 11.60	112.00 13.05 11.85	
COLUMBIA	Valvetread Non-Skid		q17.90		q17.90		q25.90		q34.60	q35.25	q37.40	37.95				q51.00	51.40	q53.50	q54.20	q65.00	q65.00	69.00			
	Plain	15.20	s15.60	19.00	20.30	21.40	23.65	30.70	31.10	31.70	33.15	33.90	34.90	36.10	42.75	44.05	45.50	47.55	48.35	50.15	55.75	56.70	57.80		
CONVERSE	Non-Skid Gray Tubes Red Tubes	15.95 3.25 3.65	16.40 3.30 3.70		21.25 4.15 4.20	22.40 4.20 4.75	24.70 4.25 4.75	32.15 5.00 5.55	32.65 5.25 5.85	34.80 5.55 6.10	35.65 5.65 6.25	36.65 5.75 6.35	37.95 6.05 6.70	37.95 6.05 6.70	44.55 6.75 7.50	45.85 6.85 7.85	48.00 7.10 7.30	48.00 7.10 7.30	50.20 7.20 7.30	53.10 7.50 7.55	54.25 7.60 7.65	57.50 7.90 8.00	60.70 8.10 8.15	66.80 8.45 8.95	70.70 8.95 9.35
	Rough Tread Smooth Tread Gray Tubes Red Tubes		q21.20 3.20 3.75		q28.10 3.90 4.25	q28.10 4.10 4.70	36.10 4.20 4.85	38.75 4.35 5.15	43.05 5.35 5.85	44.40 5.50 6.15	45.95 5.65 6.30	47.60 5.80 6.45	48.80 6.55 7.25	50.15 6.75 7.45	q52.45 q57.25 q58.75	q54.05 q58.75 q60.25	q55.65 q60.25 q61.75	q57.25 q61.75 q63.25	q58.75 q63.25 q64.75	q60.25 q64.75 q66.25	q61.75 q66.25 q67.75	q63.25 q67.75 q69.25	q64.75 q69.25 q70.75	q66.25 q70.75 q72.25	q67.75 q72.25 q73.75
CORTLAND	C. C. Plain		s15.50		s20.20		23.00	q26.15	s30.95	31.60	33.05	33.75	s34.70	s35.55	s42.85	s44.05	45.45	47.60	48.35	s49.25	s54.30	s55.95	57.50	s77.95	
	C. C. Non-Skid		s16.35		s21.15		24.75	s27.40	s32.40	33.15	34.55	35.45	s36.20	s36.60	s43.25	s44.25	45.80	47.80	49.90	s52.00	s57.05	s58.20	60.40	s81.95	
CUPPLES	Yankee Plain		s21.60		s26.50		30.50	s33.00	s39.25	41.35	42.35	43.50	s44.55	s45.65	s51.15	s52.30	53.35	55.35	56.25	s63.20	s71.70	s73.75	75.75	s81.95	
	Yankee Non-Skid		s22.95		s29.50		s31.65	s36.50	s43.55	45.95	47.10	48.25	s49.50	s50.60	s56.90	s58.10	59.15	61.15	62.30	s67.20	s79.60	s81.65	84.15	s101.75	
CURTIS	Rough Tread		q24.50		q31.00		q35.00		q40.00	q45.00	q47.00	q48.00			q53.00	q55.00	q57.00	q59.00	q64.00	q72.00	q72.00	cs78.00			
	Plain		q26.00		q32.00		q36.00		q41.00	q46.00	q48.00	q49.00			q54.00	q56.00	q58.00	q60.00	q65.00	q73.00	q73.00	84.00			
DAYTON	Gray Tubes		19.10		25.40		29.00		33.85	35.10	36.40	37.65		40.00	46.35	47.60	49.10	50.40	51.70	57.00	58.00	60.15			
	Red Tubes		22.75		27.25		36.30		43.75	45.25	46.00	48.30		50.80	56.45	57.80	59.15	60.45	61.75	67.00	68.15	70.45			
DEFIANCE	Double Wall Tubes		3.35		4.00		4.55		6.05	6.20	6.45	6.55		6.80	7.35	7.55	7.75	7.95	8.00	8.90	9.00	10.30			
			q20.70		q25.20		32.60		q38.80	48.75	50.20	51.95		53.70	s61.55	62.45	63.35	64.25	65.15	70.40	71.65	73.95			
DELION	Plain		q24.75		q31.00		39.00		q47.00	48.75	50.20	51.95		53.70	s61.55	62.45	63.35	64.25	65.15	70.40	71.65	73.95			
	Non-Skid		q26.00		q32.00		39.00		q47.00	48.75	50.20	51.95		53.70	s61.55	62.45	63.35	64.25	65.15	70.40	71.65	73.95			
DELION	Plain		q24.75		q31.00		39.00		q47.00	48.75	50.20	51.95		53.70	s61.55	62.45	63.35	64.25	65.15	70.40	71.65	73.95			
	Non-Skid		q26.00		q32.00		39.00		q47.00	48.75	50.20	51.95		53.70	s61.55	62.45	63.35	64.25	65.15	70.40	71.65	73.95			

NOTE—The letter c means that a CLINCHER tire is NOT made in this size; q that a QUICK-DETACHABLE is not made in this size, and s that a STRAIGHT SIDE is not made in this size.

## TIRES AND TUBES—Continued

Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
DIAMOND	Smooth		qs15.55		qs20.20	qs21.25	qs23.45		qs30.95	qs31.55	qs33.00	qs33.70				qs44.00	qs45.50	qs47.50	qs48.25	qs49.00	qs54.25	qs54.75	qs57.50		
	Squeegee		qs16.30		qs21.10	qs22.30	qs24.55		qs32.40	qs33.20	qs34.60	qs35.40				qs45.00	qs46.25	qs47.75	qs48.75	qs49.75	qs56.90	qs56.35	qs59.40		
	Gray Tubes		3.40		4.25	4.35	4.50		5.50	5.60	5.80	5.95				7.25	7.40	7.55	7.75	7.90	10.00	9.10	9.40		
DOUBLE FABRIC	Ribbed Type Xtra-Ply	qs18.00	qs19.20	qs24.90	qs26.85	qs28.85	qs29.35		qs36.20	qs39.05	qs41.05	qs41.90		qs44.90			qs52.95	qs53.95	qs54.90	qs59.35	qs59.50	qs67.55			
	Duo Cord Non-Skid	qs24.70	qs32.15	qs34.20	qs36.90	qs39.35	qs39.90		qs48.75	qs50.30	qs50.70	qs51.80					qs63.05	qs64.05	qs65.45	qs68.95	qs69.95	qs78.40			
	Brazil Gray Tubes	3.45	3.70	4.20	4.25	4.45	4.45		5.65	5.96	6.00	6.10		6.50		7.55	7.65	7.75	7.85	8.10	9.40	9.50	10.30		
DREADNAUGHT	Vacuum Red	qs20.70	qs20.70	qs28.90	qs29.90	qs32.90	qs33.90		qs38.15	qs38.85	qs40.80	qs42.50		qs46.30			qs54.40	qs55.35	qs56.60	qs58.75	qs62.50	qs68.55	qs70.40		
	Ribbed Red	qs18.50	qs18.50	qs22.80	qs24.80	qs27.50	qs27.50		qs33.70	qs35.75	qs36.80	qs37.90		qs41.70			qs47.90	qs49.50	qs51.75	qs53.85	qs59.50	qs61.80	qs63.90		
	Super-Dreadnaught Red Tubes	3.70	3.70	4.60	4.65	4.80	4.80		5.75	5.95	6.15	6.30		6.95			7.75	7.85	7.95	8.35	9.80	10.10	10.15		
DRY CLIMATE	Super-Dreadnaught Gray Tubes	3.35	3.35	4.15	4.25	4.40	4.40		5.20	5.40	5.55	5.70		6.30			7.10	7.20	7.35	7.85	8.90	9.05	10.58		
	Plain	15.80	20.05	23.50	27.45	31.30	31.30		31.30	31.95	33.50	34.30					45.50	47.65	48.35	56.70	56.70	59.20			
	Non-Skid	18.50	23.50	27.45	31.30	36.65	37.40		36.65	37.40	39.25	40.10					53.25	55.65	56.30	66.35	66.35	69.25			
DUNLOP	Red Tubes	3.35	4.95	5.05	5.45	5.90	7.05		7.25	7.45	7.65	7.85		7.75			9.45	9.60	9.75	9.85	11.55	11.80	12.65		
	Gray Tubes	3.25	3.90	4.00	4.20	4.60	5.40		6.00	6.15	6.30	6.50		6.00			7.30	7.40	7.50	7.65	8.95	9.15	9.30		
	Cross Groove	27.95	32.65	33.90	36.30	38.95	44.20		55.55	58.75	59.85	62.25		58.75			62.25	66.00	66.75	69.20	73.70	76.90	79.80		
DUNLOP	Traction Non-Skid	30.90	37.30	39.90	41.25	44.30	53.00		66.20	68.20	68.20	71.30		68.20			71.30	73.70	76.00	78.55	81.05	90.95	96.00		
	Gray Tubes	5.40	6.00	6.25	6.40	6.90	8.25		8.40	9.20	9.55	11.05		9.55			11.05	11.20	11.55	12.05	14.20	14.90	15.05		
DURAL	Red Tubes	3.85	4.00	4.70	4.90	5.10	5.35		6.25	6.40	6.60	6.80		7.10			8.25	8.45	8.65	8.85	9.10	10.25	10.40		
	Gray Tubes	3.40	3.45	4.20	4.30	4.35	5.00		5.35	5.45	5.65	5.80		6.25			6.95	7.20	7.30	7.55	8.75	9.00	9.10		
EHMAN	Track and Non-Skid Tread	16.40	15.85	24.25	26.65	28.85	24.25		31.75	32.30	33.70	34.55		40.50			45.05	46.60	48.60	49.40	56.60	55.55	62.90		
	Gray Tubes	3.50	3.45	4.20	4.35	5.35	4.35		5.35	5.45	5.65	5.80		6.55			6.90	7.05	7.25	7.50	8.80	9.70	10.65		
	Red Tubes	3.85	3.80	4.80	4.80	5.90	6.00		6.90	7.00	7.20	7.45		7.45			7.75	8.00	8.25	8.50	9.40	9.70	10.65		
EMPIRE	Universal Gray Tubes	3.85	3.85	4.20	4.20	4.20	4.20		4.20	4.20	4.20	4.20		4.20			4.20	4.20	4.20	4.20	4.20	4.20	4.20		
	Universal Red Tubes	4.20	4.20	4.20	4.20	4.20	4.20		4.20	4.20	4.20	4.20		4.20			4.20	4.20	4.20	4.20	4.20	4.20	4.20		
	Smooth Gray	qs17.70	qs22.45	qs24.65	qs27.40	qs31.15	qs34.40		qs37.05	qs38.80	qs40.80	qs42.50		40.50			45.05	46.60	48.60	49.40	56.60	55.55	62.90		
EMPIRE	Non-Skid Gray	17.60	18.50	27.45	28.65	31.15	36.40		36.40	37.05	38.70	39.40		41.05			50.35	51.60	53.35	56.90	59.00	65.35	66.35		
	Non-Skid Red	19.50	20.50	30.45	31.45	34.00	40.40		40.40	41.20	43.00	43.70		45.60			55.95	57.30	59.10	62.75	65.55	72.60	73.70		
	Cord Non-Skid	3.30	3.35	4.10	4.30	5.40	5.55		5.65	5.85	6.00	6.15		6.15			7.10	7.25	7.30	7.45	7.75	8.40	9.00		
ENDURANCE	Red Tubes	3.80	4.00	4.75	4.95	5.10	5.35		6.25	6.40	6.60	6.80		7.05			8.00	8.25	8.55	8.75	8.90	11.00	11.10		
	Gray Tubes	3.40	3.45	4.20	4.30	4.35	5.10		5.35	5.45	5.65	5.80		6.25			6.95	7.20	7.30	7.55	8.75	9.00	9.10		
	Ball Bearing Non-Skid	qs22.40	qs28.75	qs32.40	qs36.05	qs39.70	qs43.35		qs47.00	qs50.65	qs54.30	qs57.95		qs61.60			qs65.25	qs68.90	qs72.55	qs76.20	qs79.85	qs83.50	qs87.15		
ENDURANCE	Gray Tubes	3.80	4.00	4.25	4.45	4.60	5.40		5.60	5.75	5.95	6.25		6.75			8.05	8.10	8.30	8.45	8.65	10.65	10.25		
	Red Tubes	4.25	4.35	4.80	4.90	5.50	5.60		6.35	6.75	7.05	7.50		8.00			9.20	9.40	9.65	10.12	11.35	11.70	12.90		
ESSEX	Red Tubes	3.85	3.80	4.60	4.75	4.80	5.60		5.90	6.00	6.20	6.40		7.20			7.75	8.00	8.25	8.50	9.70	10.05	10.00		
	Gray Tubes	3.50	3.50	4.20	4.30	4.35	5.10		5.35	5.45	5.65	5.80		6.55			7.05	7.23	7.30	7.50	8.80	9.70	9.10		
FALLS	Tractor Ribbed	qs16.25	qs21.00	qs23.85	qs26.70	qs29.55	qs32.40		qs35.25	qs38.10	qs40.95	qs43.80		qs46.65			qs50.50	qs53.35	qs56.20	qs59.05	qs61.90	qs64.75	qs67.60		
	"Neverslip" Non-Skid	qs20.85	qs25.60	qs28.45	qs31.30	qs34.15	qs37.00		qs39.85	qs42.70	qs45.55	qs48.40		qs51.25			qs54.10	qs56.95	qs59.80	qs62.65	qs65.50	qs68.35	qs71.20		
	Cord Ribbed	qs22.60	qs27.35	qs30.20	qs33.05	qs35.90	qs38.75		qs41.60	qs44.45	qs47.30	qs50.15		qs53.00			qs55.85	qs58.70	qs61.55	qs64.40	qs67.25	qs70.10	qs72.95		
FALLS	Cord "Neverslip"	3.60	3.65	4.65	4.70	4.80	5.95		6.20	6.40	6.45	6.45		7.10			7.95	8.00	8.15	8.30	8.75	9.90	10.25		
	Pure Gum Green Tubes																								
	Plain	qs15.80	qs20.60	qs23.45	qs26.30	qs29.15	qs32.00		qs34.85	qs37.70	qs40.55	qs43.40		qs46.25			qs49.10	qs51.95	qs54.80	qs57.65	qs60.50	qs63.35	qs66.20		
FEDERAL	Traffic Tread	qs16.60	qs21.40	qs24.25	qs27.10	qs30.00	qs32.85		qs35.70	qs38.55	qs41.40	qs44.25		qs47.10			qs50.00	qs52.85	qs55.70	qs58.55	qs61.40	qs64.25	qs67.10		
	Rugged Tread	qs17.85	qs22.65	qs25.50	qs28.35	qs31.20	qs34.05		qs36.90	qs39.75	qs42.60	qs45.45		qs48.30			qs51.15	qs54.00	qs56.85	qs59.70	qs62.55	qs65.40	qs68.25		
	Cord Non-Skid	3.00	3.00	3.75	3.85	4.00	4.30		4.85	5.00	5.15	5.25		5.65			6.40	6.45							



Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	37x5	37x5½	38x5½
GENERAL	Plain	18.95	21.50	23.15	23.15	29.35	28.80	32.75	37.60	38.15	40.50	41.20	42.75	43.35	57.40	57.40	50.70	53.15	55.30	58.80	65.35	67.10	67.55	
	Non-Skid Fabric	20.20	23.40	27.25	27.25	32.40	32.40	37.00	42.50	43.35	45.80	46.65	49.05	49.85	57.40	57.40	50.70	53.15	55.30	58.80	65.35	67.10	67.55	
	Gray Tubes	3.40	3.70	4.05	4.05	4.30	4.30	4.90	5.80	5.80	6.15	6.35	6.60	6.85	8.00	8.00	8.05	8.25	8.65	9.00	9.75	10.00	10.20	
	Red Tubes	3.90	3.90	4.95	4.95	5.10	5.10	5.30	6.75	6.75	7.35	7.55	7.70	8.20	8.55	8.55	9.00	9.25	9.85	10.40	10.30	10.65	10.95	11.65
GILLETTE SAFETY	Rib Tread Cord	16.40	19.75	23.35	23.35	26.25	28.80	32.75	37.60	38.15	40.50	41.20	42.75	43.35	q60.65	q60.65	q60.65	q60.65	q60.65	q60.65	q60.65	q60.65	q60.65	q60.65
	Non-Skid Cord	17.25	20.50	24.00	24.00	26.25	28.80	32.75	37.60	38.15	40.50	41.20	42.75	43.35	q60.65	q60.65	q60.65	q60.65	q60.65	q60.65	q60.65	q60.65	q60.65	q60.65
	Ribbed Non-Skid	17.00	20.25	23.75	23.75	26.25	28.80	32.75	37.60	38.15	40.50	41.20	42.75	43.35	q60.65	q60.65	q60.65	q60.65	q60.65	q60.65	q60.65	q60.65	q60.65	q60.65
	Plain Cord	2.75	3.00	3.75	3.75	4.00	4.00	4.30	4.85	4.85	5.05	5.15	5.25	5.45	6.05	6.05	6.45	6.60	6.80	7.00	7.40	7.40	7.40	7.40
GLOBE	Hard Service Red Tubes	3.70	3.70	4.62	4.62	4.90	4.90	5.35	6.00	6.00	6.15	6.30	6.55	6.55	7.30	7.30	8.10	8.25	8.40	8.50	8.90	9.90	10.00	
	Plain	s21.40	s21.05	s26.50	19.75	26.25	28.80	32.75	37.60	38.15	40.50	41.20	42.75	43.35	35.50	35.50	45.55	47.65	48.35	55.35	62.15	64.20	65.70	s85.45
	Good Grip Non-Skid	s24.05	s23.95	s29.40	23.50	26.50	28.80	32.75	37.60	38.15	40.50	41.20	42.75	43.35	35.50	35.50	45.55	47.65	48.35	55.35	62.15	64.20	65.70	s85.45
	Red Tubes	3.70	3.85	4.15	4.15	4.45	4.45	4.75	5.00	5.25	5.45	5.65	5.95	6.20	6.35	6.35	6.45	6.55	6.65	6.75	6.85	6.95	7.05	s104.55
GOODRICH	Gray Tubes	3.20	3.40	3.70	3.70	4.00	4.00	4.30	4.85	5.00	5.15	5.30	5.55	5.55	6.20	6.20	7.00	7.15	7.30	7.50	7.90	9.10	9.25	10.30
	Plain	q15.20	q15.55	q20.60	19.75	26.25	28.80	32.75	37.60	38.15	40.50	41.20	42.75	43.35	35.50	35.50	45.55	47.65	48.35	55.35	62.15	64.20	65.70	s85.45
	Safety Tread	q15.20	q15.55	q20.60	19.75	26.25	28.80	32.75	37.60	38.15	40.50	41.20	42.75	43.35	35.50	35.50	45.55	47.65	48.35	55.35	62.15	64.20	65.70	s85.45
	S. S. Silvertown Ribbed Tread	q15.20	q15.55	q20.60	19.75	26.25	28.80	32.75	37.60	38.15	40.50	41.20	42.75	43.35	35.50	35.50	45.55	47.65	48.35	55.35	62.15	64.20	65.70	s85.45
GOODYEAR	Q. D. Silvertown Ribbed Tread	q15.20	q15.55	q20.60	19.75	26.25	28.80	32.75	37.60	38.15	40.50	41.20	42.75	43.35	35.50	35.50	45.55	47.65	48.35	55.35	62.15	64.20	65.70	s85.45
	All-Weather	q15.20	q15.55	q20.60	19.75	26.25	28.80	32.75	37.60	38.15	40.50	41.20	42.75	43.35	35.50	35.50	45.55	47.65	48.35	55.35	62.15	64.20	65.70	s85.45
	Ribbed Tread Cord	q15.20	q15.55	q20.60	19.75	26.25	28.80	32.75	37.60	38.15	40.50	41.20	42.75	43.35	35.50	35.50	45.55	47.65	48.35	55.35	62.15	64.20	65.70	s85.45
	Heavy Tourist Tubes	q15.20	q15.55	q20.60	19.75	26.25	28.80	32.75	37.60	38.15	40.50	41.20	42.75	43.35	35.50	35.50	45.55	47.65	48.35	55.35	62.15	64.20	65.70	s85.45
GORDON	Q. D. Silvertown Safety Tread	q15.20	q15.55	q20.60	19.75	26.25	28.80	32.75	37.60	38.15	40.50	41.20	42.75	43.35	35.50	35.50	45.55	47.65	48.35	55.35	62.15	64.20	65.70	s85.45
	Gray Tubes	q15.20	q15.55	q20.60	19.75	26.25	28.80	32.75	37.60	38.15	40.50	41.20	42.75	43.35	35.50	35.50	45.55	47.65	48.35	55.35	62.15	64.20	65.70	s85.45
	Red Tubes	q15.20	q15.55	q20.60	19.75	26.25	28.80	32.75	37.60	38.15	40.50	41.20	42.75	43.35	35.50	35.50	45.55	47.65	48.35	55.35	62.15	64.20	65.70	s85.45
	Lotration Tread	q15.20	q15.55	q20.60	19.75	26.25	28.80	32.75	37.60	38.15	40.50	41.20	42.75	43.35	35.50	35.50	45.55	47.65	48.35	55.35	62.15	64.20	65.70	s85.45
GREEN BAY PEERLESS	Triangle Tread	q15.20	q15.55	q20.60	19.75	26.25	28.80	32.75	37.60	38.15	40.50	41.20	42.75	43.35	35.50	35.50	45.55	47.65	48.35	55.35	62.15	64.20	65.70	s85.45
	Gray Tubes	q15.20	q15.55	q20.60	19.75	26.25	28.80	32.75	37.60	38.15	40.50	41.20	42.75	43.35	35.50	35.50	45.55	47.65	48.35	55.35	62.15	64.20	65.70	s85.45
	Red Tubes	q15.20	q15.55	q20.60	19.75	26.25	28.80	32.75	37.60	38.15	40.50	41.20	42.75	43.35	35.50	35.50	45.55	47.65	48.35	55.35	62.15	64.20	65.70	s85.45
	Ribbed Tread	q15.20	q15.55	q20.60	19.75	26.25	28.80	32.75	37.60	38.15	40.50	41.20	42.75	43.35	35.50	35.50	45.55	47.65	48.35	55.35	62.15	64.20	65.70	s85.45
GRYPHON	Non-Skid	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00	24.00	25.00	26.00	27.00	28.00	29.00	30.00	31.00	32.00	33.00	34.00	35.00	36.00	37.00
	Red Tubes	3.20	3.55	4.00	4.00	4.45	4.45	4.90	5.80	5.80	6.15	6.40	6.55	6.85	7.45	7.45	7.65	7.75	7.90	8.15	8.35	8.65	8.95	9.45
	Gray Tubes	3.25	3.70	3.70	3.70	4.05	4.05	4.50	5.40	5.40	5.75	5.45	5.70	6.00	6.50	6.50	6.75	6.90	7.05	7.35	7.55	7.85	8.00	8.60
	Non-Skid	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00	24.00	25.00	26.00	27.00	28.00	29.00	30.00	31.00	32.00	33.00	34.00	35.00	36.00	37.00
HANES	Plain	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00	24.00	25.00	26.00	27.00	28.00	29.00	30.00	31.00	32.00	33.00	34.00	35.00	36.00	37.00
	Non-Skid	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00	24.00	25.00	26.00	27.00	28.00	29.00	30.00	31.00	32.00	33.00	34.00	35.00	36.00	37.00
	Gray Tubes	3.70	3.85	4.00	4.00	4.30	4.30	4.60	5.50	5.50	5.85	6.00	6.20	6.45	6.80	6.80	7.00	7.15	7.35	7.55	7.85	8.00	8.60	9.00
	Non-Skid	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00	24.00	25.00	26.00	27.00	28.00	29.00	30.00	31.00	32.00	33.00	34.00	35.00	36.00	37.00
HARDMAN	Plain	17.00	18.30	20.00	20.00	22.00	22.00	24.00	28.00	31.15	32.95	33.45	37.95	37.95	43.80	43.80	45.85	47.55	48.30	51.95	55.95	59.00	69.40	59.00
	Non-Skid	17.00	18.30	20.00	20.00	22.00	22.00	24.00	28.00	31.15	32.95	33.45	37.95	37.95	43.80	43.80	45.85	47.55	48.30	51.95	55.95	59.00	69.40	59.00
	Gray Tubes	3.70	3.85	4.00	4.00	4.30	4.30	4.60	5.50	5.50	5.85	6.00	6.20	6.45	6.80	6.80	7.00	7.15	7.35	7.55	7.85	8.00	8.60	9.00
	Non-Skid	17.00	18.30	20.00	20.00	22.00	22.00	24.00	28.00	31.15	32.95	33.45	37.95	37.95	43.80	43.80	45.85	47.55	48.30	51.95	55.95	59.00	69.40	59.00
HARTFORD V.	Plain	14.00	15.20	16																				

## TIRES AND TUBES—Continued

Name	Trade Name and Tread	28.3	30.3	32.3	30x3 1/2	31x3 1/2	32x3 1/2	34x3 1/2	31x4	32x4	33x4	34x4	35x4	36x4	32x4 1/2	33x4 1/2	34x4 1/2	35x4 1/2	36x4 1/2	37x4 1/2	35x5	36x5	37x5	37x5 1/2	38x5 1/2
HOOD	Plain	21.75	22.25	23.50	33.15	35.50	38.75	39.45	40.80	41.20	43.60	44.75	56.75	57.60	59.85	61.40	62.60	64.05	73.70	75.10	76.35	77.30	78.50	79.90	81.10
	Ribbed	25.70	26.20	27.50	37.00	41.75	45.50	48.00	49.50	50.25	53.85	56.60	65.30	66.20	67.20	68.40	69.00	70.35	80.10	82.80	84.60	86.00	87.50	89.00	90.10
	Arrow Non-Skid	26.00	26.50	27.00	37.50	42.25	46.00	48.50	50.00	50.75	54.35	57.10	65.80	66.70	67.70	68.90	69.50	71.25	81.00	83.70	85.50	86.90	88.40	89.90	91.00
	Puritan Plain	18.50	19.00	19.50	23.60	26.00	28.50	31.00	33.50	36.00	38.50	41.00	43.50	46.00	48.50	51.00	53.50	56.00	58.50	61.00	63.50	66.00	68.50	71.00	73.50
	Puritan Non-Skid	20.85	21.35	21.85	24.00	26.50	29.00	31.50	34.00	36.50	39.00	41.50	44.00	46.50	49.00	51.50	54.00	56.50	59.00	61.50	64.00	66.50	69.00	71.50	74.00
HOWE	Red and Gray Tubes	3.75	3.80	3.85	4.45	4.50	4.55	5.80	5.90	6.00	6.50	7.00	7.55	7.65	7.70	7.80	8.00	8.40	9.15	9.30	9.60	9.90	10.20	10.50	10.80
	Ribbed Tread	21.90	22.40	22.90	24.00	26.50	29.00	31.50	34.00	36.50	39.00	41.50	44.00	46.50	49.00	51.50	54.00	56.50	59.00	61.50	64.00	66.50	69.00	71.50	74.00
	Non-Skid	23.40	23.90	24.40	25.50	28.00	30.50	33.00	35.50	38.00	40.50	43.00	45.50	48.00	50.50	53.00	55.50	58.00	60.50	63.00	65.50	68.00	70.50	73.00	75.50
	Red Tubes	3.90	4.00	4.10	4.85	4.95	5.10	6.40	6.50	6.60	7.10	7.60	8.15	8.25	8.35	8.45	8.60	9.00	9.75	9.90	10.20	10.50	10.80	11.10	11.40
	Gray Tubes	3.20	3.30	3.40	3.85	3.95	4.10	5.40	5.50	5.60	6.10	6.60	7.15	7.25	7.35	7.45	7.60	8.00	8.75	8.90	9.20	9.50	9.80	10.10	10.40
INDIANA	Plain	14.85	15.35	15.85	18.00	20.50	23.00	25.50	28.00	30.50	33.00	35.50	38.00	40.50	43.00	45.50	48.00	50.50	53.00	55.50	58.00	60.50	63.00	65.50	68.00
	Button and Traction Non-Skid	16.00	16.50	17.00	19.50	22.00	24.50	27.00	29.50	32.00	34.50	37.00	39.50	42.00	44.50	47.00	49.50	52.00	54.50	57.00	59.50	62.00	64.50	67.00	69.50
	Gray Tubes	3.15	3.20	3.25	3.70	3.75	3.80	4.25	4.30	4.35	4.80	5.30	5.80	6.30	6.80	7.30	7.80	8.30	8.80	9.30	9.80	10.30	10.80	11.30	11.80
	Brown Tubes	3.80	3.90	4.00	4.45	4.55	4.65	5.90	6.00	6.10	6.60	7.10	7.65	8.15	8.25	8.35	8.50	8.90	9.65	9.80	10.10	10.40	10.70	11.00	11.30
	Everlast Red Tubes	3.75	3.80	3.85	4.45	4.50	4.55	5.80	5.90	6.00	6.50	7.00	7.55	7.65	7.70	7.80	8.00	8.40	9.15	9.30	9.60	9.90	10.20	10.50	10.80
KELLY-SPRINGFIELD	Plain	22.15	22.65	23.15	25.00	27.50	30.00	32.50	35.00	37.50	40.00	42.50	45.00	47.50	50.00	52.50	55.00	57.50	60.00	62.50	65.00	67.50	70.00	72.50	75.00
	Driving Tread	23.65	24.15	24.65	26.50	29.00	31.50	34.00	36.50	39.00	41.50	44.00	46.50	49.00	51.50	54.00	56.50	59.00	61.50	64.00	66.50	69.00	71.50	74.00	76.50
	Kant-Slip Tread	25.15	25.65	26.15	28.00	30.50	33.00	35.50	38.00	40.50	43.00	45.50	48.00	50.50	53.00	55.50	58.00	60.50	63.00	65.50	68.00	70.50	73.00	75.50	78.00
	Cord Grooved	26.65	27.15	27.65	29.50	32.00	34.50	37.00	39.50	42.00	44.50	47.00	49.50	52.00	54.50	57.00	59.50	62.00	64.50	67.00	69.50	72.00	74.50	77.00	79.50
	Red Tubes	4.05	4.25	4.40	4.90	5.00	5.10	6.40	6.50	6.60	7.10	7.60	8.15	8.65	9.15	9.65	10.15	10.65	11.15	11.65	12.15	12.65	13.15	13.65	14.15
KNIGHT	Blackstone Non-Skid	18.00	18.50	19.00	21.00	23.50	26.00	28.50	31.00	33.50	36.00	38.50	41.00	43.50	46.00	48.50	51.00	53.50	56.00	58.50	61.00	63.50	66.00	68.50	71.00
	Plain	19.50	20.00	20.50	22.50	25.00	27.50	30.00	32.50	35.00	37.50	40.00	42.50	45.00	47.50	50.00	52.50	55.00	57.50	60.00	62.50	65.00	67.50	70.00	72.50
	Knight Ribbed	21.00	21.50	22.00	24.00	26.50	29.00	31.50	34.00	36.50	39.00	41.50	44.00	46.50	49.00	51.50	54.00	56.50	59.00	61.50	64.00	66.50	69.00	71.50	74.00
	Blackstone Tubes	3.50	3.60	3.70	4.15	4.25	4.35	5.60	5.70	5.80	6.30	6.80	7.35	7.85	8.35	8.85	9.35	9.85	10.35	10.85	11.35	11.85	12.35	12.85	13.35
	Knight Red Tubes	4.25	4.35	4.45	4.90	5.00	5.10	6.40	6.50	6.60	7.10	7.60	8.15	8.65	9.15	9.65	10.15	10.65	11.15	11.65	12.15	12.65	13.15	13.65	14.15
KOKOMO	Plain	16.85	17.35	17.85	19.50	22.00	24.50	27.00	29.50	32.00	34.50	37.00	39.50	42.00	44.50	47.00	49.50	52.00	54.50	57.00	59.50	62.00	64.50	67.00	69.50
	Gridiron Non-Skid	18.35	18.85	19.35	21.00	23.50	26.00	28.50	31.00	33.50	36.00	38.50	41.00	43.50	46.00	48.50	51.00	53.50	56.00	58.50	61.00	63.50	66.00	68.50	71.00
	Standard Gray Tubes	2.90	3.00	3.10	3.55	3.65	3.75	5.00	5.10	5.20	5.70	6.20	6.75	7.25	7.75	8.25	8.75	9.25	9.75	10.25	10.75	11.25	11.75	12.25	12.75
	Standard Red Tubes	3.25	3.35	3.45	3.90	4.00	4.10	5.40	5.50	5.60	6.10	6.60	7.15	7.65	8.15	8.65	9.15	9.65	10.15	10.65	11.15	11.65	12.15	12.65	13.15
	Everlast Red Tubes	3.45	3.55	3.65	4.00	4.10	4.20	5.50	5.60	5.70	6.20	6.70	7.25	7.75	8.25	8.75	9.25	9.75	10.25	10.75	11.25	11.75	12.25	12.75	13.25
LANCASTER	Clintstone White Plain or Non-Skid	17.50	18.00	18.50	20.50	23.00	25.50	28.00	30.50	33.00	35.50	38.00	40.50	43.00	45.50	48.00	50.50	53.00	55.50	58.00	60.50	63.00	65.50	68.00	70.50
	Clintstone Black	18.50	19.00	19.50	21.50	24.00	26.50	29.00	31.50	34.00	36.50	39.00	41.50	44.00	46.50	49.00	51.50	54.00	56.50	59.00	61.50	64.00	66.50	69.00	71.50
	Clintstone Tubes	2.95	3.05	3.15	3.60	3.70	3.80	5.10	5.20	5.30	5.80	6.30	6.85	7.35	7.85	8.35	8.85	9.35	9.85	10.35	10.85	11.35	11.85	12.35	12.85
	Lancaster Plain	24.10	24.60	25.10	27.10	29.60	32.10	34.60	37.10	39.60	42.10	44.60	47.10	49.60	52.10	54.60	57.10	59.60	62.10	64.60	67.10	69.60	72.10	74.60	77.10
	Lancaster Wiregrip	26.25	26.75	27.25	29.25	31.75	34.25	36.75	39.25	41.75	44.25	46.75	49.25	51.75	54.25	56.75	59.25	61.75	64.25	66.75	69.25	71.75	74.25	76.75	79.25
LEE	Standard Ribbed	16.50	17.00	17.50	19.50	22.00	24.50	27.00	29.50	32.00	34.50	37.00	39.50	42.00	44.50	47.00	49.50	52.00	54.50	57.00	59.50	62.00	64.50	67.00	69.50
	Imperial	17.50	18.00	18.50	20.50	23.00	25.50	28.00	30.50	33.00	35.50	38.00	40.50	43.00	45.50	48.00	50.50	53.00	55.50	58.00	60.50	63.00	65.50	68.00	70.50
	Standard Non-Skid	18.50	19.00	19.50	21.50	24.00	26.50	29.00	31.50	34.00	36.50	39.00	41.50	44.00	46.50	49.00	51.50	54.00	56.50	59.00	61.50	64.00	66.50	69.00	71.50
	Puncture Proof Plain	19.50	20.00	20.50	22.50	25.00	27.50	30.00	32.50	35.00	37.50	40.00	42.50	45.00	47.50	50.00	52.50	55.00	57.50	60.00	62.50	65.00			



Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	32x3½	34x3½	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
MARION	Plain	qs14.60	qs15.80	qs20.00	qs20.00	qs22.50	qs25.00	qs31.50	qs33.50	qs34.00	qs36.00	qs39.50	qs40.25	qs40.25	qs40.25	qs40.25	qs40.25	qs40.25	qs40.25	qs40.25	qs40.25	qs40.25	qs40.25	qs40.25
	Ribbed	qs16.50	qs17.60	qs22.50	qs22.50	qs25.00	qs27.50	qs34.00	qs36.00	qs37.50	qs39.50	qs42.50	qs44.00	qs44.00	qs44.00	qs44.00	qs44.00	qs44.00	qs44.00	qs44.00	qs44.00	qs44.00	qs44.00	qs44.00
	Non-Skid	qs18.50	qs19.60	qs24.50	qs24.50	qs27.00	qs29.50	qs36.00	qs38.00	qs39.50	qs41.50	qs44.50	qs46.00	qs46.00	qs46.00	qs46.00	qs46.00	qs46.00	qs46.00	qs46.00	qs46.00	qs46.00	qs46.00	qs46.00
	Gray	qs19.50	qs20.60	qs25.50	qs25.50	qs28.00	qs30.50	qs37.00	qs39.00	qs40.50	qs42.50	qs45.50	qs47.00	qs47.00	qs47.00	qs47.00	qs47.00	qs47.00	qs47.00	qs47.00	qs47.00	qs47.00	qs47.00	qs47.00
MASON	Plain	qs15.50	qs16.60	qs21.50	qs21.50	qs24.00	qs26.50	qs33.00	qs35.00	qs36.50	qs38.50	qs41.50	qs43.00	qs43.00	qs43.00	qs43.00	qs43.00	qs43.00	qs43.00	qs43.00	qs43.00	qs43.00	qs43.00	qs43.00
	Ribbed	qs17.50	qs18.60	qs23.50	qs23.50	qs26.00	qs28.50	qs35.00	qs37.00	qs38.50	qs40.50	qs43.50	qs45.00	qs45.00	qs45.00	qs45.00	qs45.00	qs45.00	qs45.00	qs45.00	qs45.00	qs45.00	qs45.00	qs45.00
	Non-Skid	qs19.50	qs20.60	qs25.50	qs25.50	qs28.00	qs30.50	qs37.00	qs39.00	qs40.50	qs42.50	qs45.50	qs47.00	qs47.00	qs47.00	qs47.00	qs47.00	qs47.00	qs47.00	qs47.00	qs47.00	qs47.00	qs47.00	qs47.00
	Gray	qs21.50	qs22.60	qs27.50	qs27.50	qs30.00	qs32.50	qs39.00	qs41.00	qs42.50	qs44.50	qs47.50	qs49.00	qs49.00	qs49.00	qs49.00	qs49.00	qs49.00	qs49.00	qs49.00	qs49.00	qs49.00	qs49.00	qs49.00
MICHELIN	Plain	qs16.45	qs17.55	qs22.50	qs22.50	qs25.00	qs27.50	qs34.00	qs36.00	qs37.50	qs39.50	qs42.50	qs44.00	qs44.00	qs44.00	qs44.00	qs44.00	qs44.00	qs44.00	qs44.00	qs44.00	qs44.00	qs44.00	qs44.00
	Ribbed	qs18.45	qs19.55	qs24.50	qs24.50	qs27.00	qs29.50	qs36.00	qs38.00	qs39.50	qs41.50	qs44.50	qs46.00	qs46.00	qs46.00	qs46.00	qs46.00	qs46.00	qs46.00	qs46.00	qs46.00	qs46.00	qs46.00	qs46.00
	Non-Skid	qs20.45	qs21.55	qs26.50	qs26.50	qs29.00	qs31.50	qs38.00	qs40.00	qs41.50	qs43.50	qs46.50	qs48.00	qs48.00	qs48.00	qs48.00	qs48.00	qs48.00	qs48.00	qs48.00	qs48.00	qs48.00	qs48.00	qs48.00
	Gray	qs22.45	qs23.55	qs28.50	qs28.50	qs31.00	qs33.50	qs40.00	qs42.00	qs43.50	qs45.50	qs48.50	qs50.00	qs50.00	qs50.00	qs50.00	qs50.00	qs50.00	qs50.00	qs50.00	qs50.00	qs50.00	qs50.00	qs50.00
MOHAWK	Plain	qs17.70	qs18.80	qs23.75	qs23.75	qs26.25	qs28.75	qs35.25	qs37.25	qs38.75	qs40.75	qs43.75	qs45.25	qs45.25	qs45.25	qs45.25	qs45.25	qs45.25	qs45.25	qs45.25	qs45.25	qs45.25	qs45.25	qs45.25
	Ribbed	qs19.70	qs20.80	qs25.75	qs25.75	qs28.25	qs30.75	qs37.25	qs39.25	qs40.75	qs42.75	qs45.75	qs47.25	qs47.25	qs47.25	qs47.25	qs47.25	qs47.25	qs47.25	qs47.25	qs47.25	qs47.25	qs47.25	qs47.25
	Non-Skid	qs21.70	qs22.80	qs27.75	qs27.75	qs30.25	qs32.75	qs39.25	qs41.25	qs42.75	qs44.75	qs47.75	qs49.25	qs49.25	qs49.25	qs49.25	qs49.25	qs49.25	qs49.25	qs49.25	qs49.25	qs49.25	qs49.25	qs49.25
	Gray	qs23.70	qs24.80	qs29.75	qs29.75	qs32.25	qs34.75	qs41.25	qs43.25	qs44.75	qs46.75	qs49.75	qs51.25	qs51.25	qs51.25	qs51.25	qs51.25	qs51.25	qs51.25	qs51.25	qs51.25	qs51.25	qs51.25	qs51.25
MONARCH	Plain	qs18.45	qs19.55	qs24.50	qs24.50	qs27.00	qs29.50	qs36.00	qs38.00	qs39.50	qs41.50	qs44.50	qs46.00	qs46.00	qs46.00	qs46.00	qs46.00	qs46.00	qs46.00	qs46.00	qs46.00	qs46.00	qs46.00	qs46.00
	Ribbed	qs20.45	qs21.55	qs26.50	qs26.50	qs29.00	qs31.50	qs38.00	qs40.00	qs41.50	qs43.50	qs46.50	qs48.00	qs48.00	qs48.00	qs48.00	qs48.00	qs48.00	qs48.00	qs48.00	qs48.00	qs48.00	qs48.00	qs48.00
	Non-Skid	qs22.45	qs23.55	qs28.50	qs28.50	qs31.00	qs33.50	qs40.00	qs42.00	qs43.50	qs45.50	qs48.50	qs50.00	qs50.00	qs50.00	qs50.00	qs50.00	qs50.00	qs50.00	qs50.00	qs50.00	qs50.00	qs50.00	qs50.00
	Gray	qs24.45	qs25.55	qs30.50	qs30.50	qs33.00	qs35.50	qs42.00	qs44.00	qs45.50	qs47.50	qs50.50	qs52.00	qs52.00	qs52.00	qs52.00	qs52.00	qs52.00	qs52.00	qs52.00	qs52.00	qs52.00	qs52.00	qs52.00
NABOB	Plain	qs19.95	qs21.05	qs26.00	qs26.00	qs28.50	qs31.00	qs37.50	qs39.50	qs41.00	qs43.00	qs46.00	qs47.50	qs47.50	qs47.50	qs47.50	qs47.50	qs47.50	qs47.50	qs47.50	qs47.50	qs47.50	qs47.50	qs47.50
	Ribbed	qs21.95	qs23.05	qs28.00	qs28.00	qs30.50	qs33.00	qs39.50	qs41.50	qs43.00	qs45.00	qs48.00	qs49.50	qs49.50	qs49.50	qs49.50	qs49.50	qs49.50	qs49.50	qs49.50	qs49.50	qs49.50	qs49.50	qs49.50
	Non-Skid	qs23.95	qs25.05	qs30.00	qs30.00	qs32.50	qs35.00	qs41.50	qs43.50	qs45.00	qs47.00	qs50.00	qs51.50	qs51.50	qs51.50	qs51.50	qs51.50	qs51.50	qs51.50	qs51.50	qs51.50	qs51.50	qs51.50	qs51.50
	Gray	qs25.95	qs27.05	qs32.00	qs32.00	qs34.50	qs37.00	qs43.50	qs45.50	qs47.00	qs49.00	qs52.00	qs53.50	qs53.50	qs53.50	qs53.50	qs53.50	qs53.50	qs53.50	qs53.50	qs53.50	qs53.50	qs53.50	qs53.50
NATIONAL	Plain	qs13.80	qs14.90	qs19.85	qs19.85	qs22.35	qs24.85	qs31.35	qs33.35	qs34.85	qs36.85	qs39.85	qs41.35	qs41.35	qs41.35	qs41.35	qs41.35	qs41.35	qs41.35	qs41.35	qs41.35	qs41.35	qs41.35	qs41.35
	Ribbed	qs15.80	qs16.90	qs21.85	qs21.85	qs24.35	qs26.85	qs33.35	qs35.35	qs36.85	qs38.85	qs41.85	qs43.35	qs43.35	qs43.35	qs43.35	qs43.35	qs43.35	qs43.35	qs43.35	qs43.35	qs43.35	qs43.35	qs43.35
	Non-Skid	qs17.80	qs18.90	qs23.85	qs23.85	qs26.35	qs28.85	qs35.35	qs37.35	qs38.85	qs40.85	qs43.85	qs45.35	qs45.35	qs45.35	qs45.35	qs45.35	qs45.35	qs45.35	qs45.35	qs45.35	qs45.35	qs45.35	qs45.35
	Gray	qs19.80	qs20.90	qs25.85	qs25.85	qs28.35	qs30.85	qs37.35	qs39.35	qs40.85	qs42.85	qs45.85	qs47.35	qs47.35	qs47.35	qs47.35	qs47.35	qs47.35	qs47.35	qs47.35	qs47.35	qs47.35	qs47.35	qs47.35
NEEDHAM	Plain	qs15.55	qs16.65	qs21.60	qs21.60	qs24.10	qs26.60	qs33.10	qs35.10	qs36.60	qs38.60	qs41.60	qs43.10	qs43.10	qs43.10	qs43.10	qs43.10	qs43.10	qs43.10	qs43.10	qs43.10	qs43.10	qs43.10	qs43.10
	Ribbed	qs17.55	qs18.65	qs23.60	qs23.60	qs26.10	qs28.60	qs35.10	qs37.10	qs38.60	qs40.60	qs43.60	qs45.10	qs45.10	qs45.10	qs45.10	qs45.10	qs45.10	qs45.10	qs45.10	qs45.10	qs45.10	qs45.10	qs45.10
	Non-Skid	qs19.55	qs20.65	qs25.60	qs25.60	qs28.10	qs30.60	qs37.10	qs39.10	qs40.60	qs42.60	qs45.60	qs47.10	qs47.10	qs47.10	qs47.10	qs47.10	qs47.10	qs47.10	qs47.10	qs47.10	qs47.10	qs47.10	qs47.10
	Gray	qs21.55	qs22.65	qs27.60	qs27.60	qs30.10	qs32.60	qs39.10	qs41.10	qs42.60	qs44.60	qs47.60	qs49.10	qs49.10	qs49.10	qs49.10	qs49.10	qs49.10	qs49.10	qs49.10	qs49.10	qs49.10	qs49.10	qs49.10
NEW CASTLE	Plain	qs17.10	qs18.20	qs23.15	qs23.15	qs25.65	qs28.15	qs34.65	qs36.65	qs38.15	qs40.15	qs43.15	qs44.65	qs44.65	qs44.65	qs44.65	qs44.65	qs44.65	qs44.65	qs44.65	qs44.65	qs44.65	qs44.65	qs44.65
	Ribbed	qs19.10	qs20.20	qs25.15	qs25.15	qs27.65	qs30.15	qs36.65	qs38.65	qs40.15	qs42.15	qs45.15	qs46.65	qs46.65	qs46.65	qs46.65	qs46.65	qs46.65	qs46.65	qs46.65	qs46.65	qs46.65	qs46.65	qs46.65
	Non-Skid	qs21.10	qs22.20	qs27.15	qs27.15	qs29.65	qs32.15	qs38.65	qs40.65	qs42.15	qs44.15	qs47.15	qs48.65	qs48.65	qs48.65	qs48.65	qs48.65	qs48.65	qs48.65	qs48.65	qs48.65	qs48.65	qs48.65	qs48.65
	Gray	qs23.10	qs24.20	qs29.15	qs29.15	qs31.65	qs34.15	qs40.65	qs42.65	qs44.15	qs46.15	qs49.15	qs50.65	qs50.65	qs50.65	qs50.65	qs50							

## TIRES AND TUBES—Continued

Name	Trade Name and Tread	28x3	30x3	32x3	30x3 1/2	31x3 1/2	32x3 1/2	34x3 1/2	31x4	32x4	33x4	34x4	35x4	36x4	32x4 1/2	33x4 1/2	34x4 1/2	35x4 1/2	36x4 1/2	37x4 1/2	35x5	36x5	37x5	37x5 1/2	38x5 1/2
RACINE	Plain	qs15.60	qs16.70		qs20.55	qs21.75	23.95		qs31.55	32.20	34.40	35.25		36.80	qs43.55	44.50	45.95	46.60	48.15	50.75	56.65	58.30	59.95		
	Country Red	qs18.20	qs19.55		qs23.70	qs24.85	28.05		qs36.30	38.25	40.50	41.10		41.85	qs46.25	53.25	54.00	56.50	57.35	59.60	68.20	69.85	71.50		
	Ribbed Cord					qs43.80	qs43.80		qs53.70	55.55	57.10	58.60			qs52.65	62.65	65.95	67.50	69.20	71.50	82.05	83.95	85.80		
RACINE HORSESHOE	Non-Skid Cord	3.15	3.30		3.85	3.95	qs46.60		qs67.25	69.25	69.85	69.85		6.03	qs66.70	qs68.40	qs70.25	qs71.95	7.20	7.45	8.65	8.75	8.90		
	Gray Tubes	3.75	4.05		4.45	4.75	4.85		5.15	5.40	5.60	5.70		7.15	7.90	8.20	8.25	8.45	8.60	8.85	10.05	10.25	10.35		
	Red Tubes				4.45				6.05	6.20	6.55	6.70		7.15											
REPUBLIC	Plain	qs17.00	qs18.50		21.00	qs22.50	24.00	25.00	qs30.50	31.50	32.00	32.50		35.00	qs43.00	qs44.00	45.00	46.00	47.00	50.00	53.00	54.00	55.00		
	Non-Skid Cord	qs18.00	qs20.50		23.00	qs23.50	27.00	29.00	qs35.50	36.50	37.00	38.00		40.00	qs47.00	qs48.50	51.00	53.00	54.00	57.50	64.50	66.00	67.50		
	Gray Tubes	3.15	3.20		3.80	4.00	4.20	4.60	5.20	5.35	5.55	5.65		5.90	6.90	7.00	7.15	7.35	7.65	7.90	8.75	8.95	9.00		
REVERE	Plain	qs15.55	qs16.70		21.25	qs22.80	24.75	28.20	qs33.00	33.75	35.45	36.25		37.90	qs45.15	qs46.55	48.15	50.40	53.20	59.00	59.80	62.55			
	Ribbed Tread	qs17.55	qs19.45		qs22.30	qs25.80	qs26.00	30.00	qs34.70	35.70	38.70	qs38.05		40.25	qs48.00	qs50.55	52.55	55.00	58.00	63.20	69.00	70.00	73.20		
	Staggar Non-Skid	qs18.25	qs20.45		24.80	qs26.85	29.05	32.95	qs37.20	38.50	41.45	42.35		45.00	qs52.90	qs55.95	58.95	61.95	65.95	72.35	78.10	83.25	85.10		
SAVAGE	Blackline Red Tubes	3.30	3.50		3.80	3.95	4.10	4.50	5.15	5.30	5.50	5.60		6.35	7.20	7.40	7.55	7.65	7.75	8.10	9.05	9.25	9.35		
	Gray Tubes	3.70	3.90		4.55	4.80	4.85	5.10	6.15	6.25	6.55	6.80		7.05	7.90	8.05	8.35	8.45	8.70	8.95	10.00	10.25	10.45		
	Red Tubes				4.55				6.65	6.75	6.85														
SCHAVOIR	Plain	14.00	15.20		19.75	20.75	22.90	28.30	30.20	30.85	32.25	33.05		38.35			44.45	46.50	47.20	53.65	53.05	58.75	56.20		
	"R" Anti-Skid	14.70	15.95		21.80	21.80	24.05	29.75	31.70	32.40	33.40	34.65		40.25			46.70	48.90	49.55	56.35	53.65	61.70	59.10		
	Granite Tread	18.05			23.50	24.70	27.00		36.90	37.55	39.50	40.40					51.55	53.65	55.05	63.65	63.65	67.40	67.40		
SEMPLE	Cord Chauges	3.15	3.30		4.15	4.25	4.40	4.75	5.35	5.55	5.65	5.85		6.00	6.15	6.35	6.70	6.75	7.05	7.80	8.50	8.95	9.15		
	Gray Tubes	4.00	4.10		5.10	5.30	5.40	5.90	6.60	6.65	6.75	6.85		7.20	8.70	8.80	8.90	9.05	9.25	10.00	10.90	11.10	11.10		
	Red Tubes																								
SOUTHERN	Plain	qs14.85	qs15.05		qs19.15	qs20.60	22.40	25.40	qs29.85	30.50	31.95	32.75		34.25	qs47.70	qs49.25	50.75	52.25	53.75	56.25	62.35	63.30	66.10		
	Non-Skid	qs17.85	qs17.65		qs22.40	qs24.15	26.20	29.75	qs34.95	35.70	37.30	40.65		40.65	qs47.50	qs50.50	53.00	55.50	58.50	63.35	68.20	73.20	75.00		
	Granite Tubes	3.95	4.10		4.75	5.15	5.20	5.60	6.40	6.70	6.85	6.90		7.15	7.95	8.25	8.65	8.75	9.05	9.20	10.15	10.45	10.60		
SPEEDWAY	Gray Tubes	3.35	3.40		4.10	4.15	4.20	4.40	5.20	5.30	5.50	5.65		5.85	6.65	6.75	6.85	7.05	7.35	7.55	8.55	8.80	8.90		
	Red Tubes	3.35	3.65		4.60	4.65	4.70	5.00	5.80	5.90	6.05	6.25		6.50	7.25	7.45	7.65	7.85	8.05	8.40	9.50	9.55	9.80		
	Semco Red Tubes	3.60	3.75		4.50	4.60	4.75	5.00	6.00	6.20	6.40	6.60		6.75	7.95	8.20	8.35	8.50	8.70	8.90	9.85	10.05	10.35		
STANDARD FOUR	Plain	qs14.75	qs15.70		qs19.95	qs21.30	23.25	27.05	qs31.00	qs31.70	qs32.25	qs34.00		qs36.00	qs47.50	qs49.00	50.50	52.00	53.50	56.00	62.00	63.00	66.00		
	Non-Skid	qs17.50	qs17.50		qs26.00	qs27.45	29.25	33.05	qs35.10	qs35.10	qs36.80	qs37.85		40.40	qs47.50	qs50.50	53.00	55.50	58.50	63.35	68.20	73.20	75.00		
	Red Tubes	3.80	4.05		4.65	4.75	4.85	5.05	6.00	6.40	6.60	6.80		7.10	8.30	8.50	8.75	9.00	9.25	9.50	10.05	10.20	10.45		
STAR	Non-Skid	qs18.66	qs18.66		qs23.33	qs25.33	27.33	31.33	qs34.99	qs35.40	qs37.80	qs39.20		42.00	qs53.33	qs54.33	55.33	56.33	57.33	60.33	66.60	67.00	70.00		
	Red Tubes	4.33	4.46		5.66	6.00	6.33	6.66	7.33	7.66	8.00	8.33		8.66	9.66	9.66	9.85	10.08	10.40	10.77	12.00	12.66	13.33		
	Gray Tubes																								
STERLING	Super Tread	15.50	16.15		20.55	22.50	24.30	28.30	32.00	32.60	34.50	35.05		40.60	48.00	49.70	50.55	52.60	54.55	58.50	58.50	61.65	61.65		
	Non-Skid	16.00	17.25		22.00	23.00	25.95	30.20	34.70	35.30	37.95	38.05		40.60	51.00	51.45	54.10	56.15	58.15	65.95	65.95	69.40	69.40		
	Gray Tubes	3.15	3.20		3.80	3.95	4.20	4.50	5.20	5.35	5.55	5.65		5.75	7.05	7.15	7.35	7.65	7.90	8.75	8.95	9.05	9.05		
STRONGHOLD	Red Tubes	3.80	3.95		4.60	4.75	5.00	5.30	6.25	6.40	6.65	6.80		6.95	8.50	8.50	8.75	9.00	9.25	9.50	9.90	10.10	10.35		
	Ribbed Tread	qs23.40	qs23.40		qs28.70	qs30.05	32.75	36.75	qs41.50	qs42.75	qs44.00	qs45.25		47.25	qs55.40	qs57.10	58.85	60.60	62.30	67.50	75.50	75.50	77.25		
	All Star Non-Skid	4.15	4.15		qs31.20	qs34.50	36.50	40.50	qs43.45	qs44.70	qs46.95	qs47.20		50.50	qs56.80	qs58.50	60.25	62.00	63.75	67.50	74.50	76.80	79.25		
STRONGHOLD	Red Tubes	3.60	3.60		4.25	5.40	6.55	7.95	5.60	5.75	6.85	7.10		7.30	8.35	8.60	8.90	9.00	9.30	9.50	10.40	10.60	11.00		
	Gray Tubes						4.45					5.95													
	Sterling Vacuum-Bar Non-Skid	qs18.33	qs21.84		qs28.00	qs29.74	31.30	36.30	qs34.99	qs35.40	qs37.80	qs39.20		42.00	qs53.33	qs54.33	55.33	56.33	57.33	60.33	66.60	67.00	70.00		
SWINEHART	Sterling Seamless Red Tubes	4.08	4.37		5.94	6.05	6.23	6.66	7.12	7.25	7.51	7.72		7.85	8.92	9.24	9.52	9.78	10.04	10.38	11.51	11.77	11.98		
	Plain	19.25	21.10		24.95	27.00	31.00	34.55	qs37.15	qs37.15	qs38.65	qs40.75		42.00	qs50.60	52.60	54.30	56.25	58.20	63.10	67.37	77.91	80.96		
	Gray Tubes	3.65	3.65		4.20		4.60					6.30													
THERMOID	Stronghold Non-Skid	qs18.50	qs22.50		qs22.50	qs23.95	25.75	29.20	qs32.80	33.55	35.20	35.95		38.20	qs44.75	46.25	47.75	49.75	50.75	52.65	59.00	60.25	61.50		
	Ribbed	qs19.25	qs20.50		qs24.75	qs26.70	28.75	32.55	qs36.65	37.25	39.25	40.10		42.55	qs47.50	50.25	51.90	53.55	55.95	59.50	65.75	66.85	68.10		
	Non-Skid Tubes	3.25	3.35		3.90	4.10	4.15	4.35	5.15	5.35	5.50	5.60		5.75	6.80	6.95	7.05	7.15	7.25	7.40	8.50	8.70	8.85		
THERMOID	Cord Ribbed Tread	qs13.60	qs14.40		qs18.30	qs19.15	21.10	23.50	qs28.15	28.60	29.90	30.45		32.00	qs41.80	43.40	44.75	46.00	47.30	48.60	51.20	51.85	52.45		
	Non-Skid	qs15.30	qs16.35		qs21.45	qs22.45	24.50	27.70	qs33.55	34.15	35.90	36.70		39.05	qs47.45	49.70	51.00	52.30	53.60	56.30	57.20	58.55	59.55		
	Gray Tubes	3.65	3.80		4.35	4.45	4.55	4.75	5.95	6.15	6.30	6.45		6.75	7.85	8.05	8.20	8.35	8.55	9.80	9.80	9.95	10.20		
THERMOID	Cord Ribbed Tread	qs19.60	qs20.10		qs24.90	qs26.15	29.05	33.90	qs38.10	38.70	40.70	41.55		48.75	qs58.50	58.50	59.40	60.30	61.20	63.60	67.10	67.25	67.70		
	Non-Skid	qs22.15	qs22.60		qs27.55	qs29.00	32.00	37.30	qs41.75	42.60	44.35	45.60		53.05	qs62.45	61.45	62.80	64.70	66.00	70.10	79.25	87.00	88.50		
	Brown and DeLuxe Red Tubes	3.80	3.85		4.90	5.00	5.15	5.45	6.20	6.30	6.40	6.60		6.80	8.00	8.15	8.30	8.45	8.75	9.10	10.00	10.20	10.50		
THERMOID	Non-Skid and Ribbed Tread	qs27.15	qs26.10		qs32.80	qs36.75	37.70	42.90	qs45.50	46.35	48.35	53.75		55.75	qs65.00	60.15	61.50	64.15	67.00	71.00	76.15	80.50	81.65		
	6000 mile cord type and worm drive	23.52	24.66		30.72	32.70	35.88	40.62	qs47.88	47.10	49.88	55.88		57.00	qs68.00	63.14	64.55	67.45	70.35	78.08	86.00	90.50	91.65		
	Gray Tubes	3.72	3.66		4.08	4.56	4.62	5.46	6.18	6.30	6.45	6.66		6.96	7.38	7.50	7.74	7.98	8.35	9.12	9.36	10.32	10.50		
THERMOID	Puncture-proof Inner Tubes	4.85	4.80		5.90</																				



Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
TYRIAN	Holdite Non-Skid Extra Heavy Red	qs17.55 4.00	s19.50 4.20	es21.20 4.35	s24.90 4.80	qs26.15 4.90	c28.25 4.95	c31.70 5.40	qs37.50 6.50	c38.30 6.65	c40.10 6.90	c40.85 7.00	c42.65 7.20	c43.25 7.50	qs49.60 8.70	qs51.90 8.85	c54.15 9.00	c56.40 9.25	c57.10 9.50	c59.35 9.65	c62.45 10.90	c63.30 11.40	c66.00 11.55	cs89.90 12.75	cs92.55 12.95
UNITED STATES	Plain Urethane Non-Skid Chain Non-Skid Nobby Non-Skid Royal Cord Non-Skid Gray Tubes Red Tubes	14.00 14.70 16.40 21.70 3.15 4.00	15.20 15.95 18.50 22.10 3.30 4.10	17.60 18.50 20.80 29.60 3.45 4.40	19.75 20.75 23.70 28.70 4.15 5.10	20.75 21.80 24.70 30.25 4.25 5.30	22.90 24.05 27.00 32.75 4.40 5.40	25.30 26.45 29.40 35.15 4.75 5.90	28.30 29.45 32.40 38.15 5.05 6.15	30.30 31.45 34.40 40.10 5.35 6.45	32.30 33.45 36.40 42.85 5.65 6.75	33.30 34.45 37.40 43.65 5.75 6.85	33.05 34.15 37.10 43.65 5.85 6.95	37.80 38.95 41.90 48.20 6.20 7.30	38.35 39.45 42.40 49.00 6.25 7.35	41.80 42.90 45.90 52.60 6.50 7.60	44.45 45.55 48.50 55.20 6.75 7.85	46.50 47.60 50.60 57.30 6.95 8.05	47.20 48.30 51.30 58.00 7.05 8.15	53.05 54.15 57.10 63.80 7.80 8.90	58.75 59.85 62.80 69.50 8.95 10.00	56.20 57.30 60.30 67.00 8.95 10.00	56.10 57.20 60.20 66.90 9.15 10.20	88.10 89.20 92.20 98.90 10.35 11.40	
VICTOR	Plain Ribbed Non-Skid Victor Gray Tubes Victor Red Tubes Springfield Pure Gum Tubes Springfield Red Tubes	18.80 20.80 21.00 3.40 3.75 3.85 4.00	19.85 22.30 22.30 3.65 3.95 4.10	21.85 24.30 24.30 3.85 4.15	24.45 26.90 26.90 4.05 4.35	26.45 28.90 28.90 4.25 4.55	28.45 30.90 30.90 4.45 4.75	30.45 32.90 32.90 4.65 4.95	32.45 34.90 34.90 4.85 5.15	34.45 36.90 36.90 5.05 5.35	36.45 38.90 38.90 5.25 5.55	38.45 40.90 40.90 5.45 5.75	40.45 42.90 42.90 5.65 5.95	42.45 44.90 44.90 5.85 6.15	44.45 46.90 46.90 6.05 6.35	46.45 48.90 48.90 6.25 6.55	48.45 50.90 50.90 6.45 6.75	50.45 52.90 52.90 6.65 6.95	52.45 54.90 54.90 6.85 7.15	54.45 56.90 56.90 7.05 7.35	56.45 58.90 58.90 7.25 7.55	60.45 62.90 62.90 7.65 7.95	62.45 64.90 64.90 7.85 8.15		
VIKING	Plain Hold-On Tread Red Tubes	s21.90 s24.60 3.85	s21.50 s24.45 4.00	s21.50 s24.45 4.35	s24.90 s27.65 4.65	s26.15 s28.90 4.90	s28.25 s30.90 4.95	s31.70 s34.45 5.20	qs37.50 40.20 6.55	c38.30 41.00 6.75	c40.10 42.80 7.00	c40.85 43.60 7.15	c42.65 45.40 7.25	c43.25 46.20 7.55	qs49.60 52.40 8.50	qs51.90 54.70 8.65	c54.15 56.50 8.80	c56.40 58.80 9.00	c57.10 59.50 9.20	c59.35 61.70 9.35	c62.45 64.70 10.45	c63.30 65.60 10.80	c66.00 68.50 10.90	cs89.90 92.40 12.10	cs92.55 95.00 12.30
VITALIC	Plain Non-Skid Red and Gray Tubes Extra Heavy Gray Tubes	qs16.25 qs17.05 4.15 4.70	s21.50 s24.45 4.25 4.80	s21.50 s24.45 5.05	qs21.10 qs22.10 5.05 5.65	qs22.10 qs23.10 5.25 5.85	qs23.10 qs24.10 5.35 5.95	qs24.10 qs25.10 5.45 6.05	qs25.10 qs26.10 5.55 6.15	qs26.10 qs27.10 5.65 6.25	qs27.10 qs28.10 5.75 6.35	qs28.10 qs29.10 5.85 6.45	qs29.10 qs30.10 5.95 6.55	qs30.10 qs31.10 6.05 6.65	qs31.10 qs32.10 6.15 6.75	qs32.10 qs33.10 6.25 6.85	qs33.10 qs34.10 6.35 6.95	qs34.10 qs35.10 6.45 7.05	qs35.10 qs36.10 6.55 7.15	qs36.10 qs37.10 6.65 7.25	qs37.10 qs38.10 6.75 7.35	qs38.10 qs39.10 6.85 7.45	qs39.10 qs40.10 6.95 7.55	qs40.10 qs41.10 7.05 7.65	
VULCAN	Gray Tubes Indian Red Tubes	3.30 3.65	3.35 3.70	3.35 3.70	4.15 4.60	4.25 4.65	4.40 4.80	4.50 4.90	5.20 5.65	5.55 5.95	5.70 6.10	5.85 6.25	6.00 6.40	6.15 6.55	6.30 6.70	6.45 6.85	6.60 7.00	6.75 7.15	6.90 7.30	7.05 7.45	7.20 7.60	7.35 7.75	7.50 7.90	7.65 8.05	7.80 8.20
WILSON	Wearwell Plain Wearwell Non-Skid Wearwell Gray Tubes Wearwell Red Tubes Wilson Non-Skid	qs15.60 qs16.40 qs15.85 3.50 3.85	qs15.20 qs16.00 qs15.45 3.45 3.80	qs15.20 qs16.00 qs15.45 3.45 3.80	qs19.60 qs20.65 4.20 4.60	qs20.65 qs21.65 4.30 4.75	qs21.65 qs22.65 4.40 4.80	qs22.65 qs23.65 4.50 4.90	qs23.65 qs24.65 4.60 5.00	qs24.65 qs25.65 4.70 5.10	qs25.65 qs26.65 4.80 5.20	qs26.65 qs27.65 4.90 5.30	qs27.65 qs28.65 5.00 5.40	qs28.65 qs29.65 5.10 5.50	qs29.65 qs30.65 5.20 5.60	qs30.65 qs31.65 5.30 5.70	qs31.65 qs32.65 5.40 5.80	qs32.65 qs33.65 5.50 5.90	qs33.65 qs34.65 5.60 6.00	qs34.65 qs35.65 5.70 6.10	qs35.65 qs36.65 5.80 6.20	qs36.65 qs37.65 5.90 6.30	qs37.65 qs38.65 6.00 6.40	qs38.65 qs39.65 6.10 6.50	
WOODWORTH	Plain Non-Skid Tubes	23.90 25.75 3.90	25.30 27.90 4.00	25.30 27.90 4.00	32.60 34.90 4.40	33.25 35.45 4.55	36.30 38.80 4.65	39.90 42.40 4.95	46.85 49.90 6.35	47.90 50.40 6.60	49.90 52.40 6.90	51.00 53.50 7.10	53.95 56.80 7.30	53.95 56.80 7.30	53.95 56.80 7.30	53.95 56.80 7.30	53.95 56.80 7.30	53.95 56.80 7.30	53.95 56.80 7.30	53.95 56.80 7.30	53.95 56.80 7.30	53.95 56.80 7.30	53.95 56.80 7.30	53.95 56.80 7.30	53.95 56.80 7.30
ZEE-ZEE	"Z" White Tread Non-Skid Brazilian Tubes Climax Non-Skid Samson Tread Non-Skid	23.90 25.75 3.90	25.30 27.90 4.00	25.30 27.90 4.00	32.60 34.90 4.40	33.25 35.45 4.55	36.30 38.80 4.65	39.90 42.40 4.95	46.85 49.90 6.35	47.90 50.40 6.60	49.90 52.40 6.90	51.00 53.50 7.10	53.95 56.80 7.30	53.95 56.80 7.30	53.95 56.80 7.30	53.95 56.80 7.30	53.95 56.80 7.30	53.95 56.80 7.30	53.95 56.80 7.30	53.95 56.80 7.30	53.95 56.80 7.30	53.95 56.80 7.30	53.95 56.80 7.30	53.95 56.80 7.30	53.95 56.80 7.30

NOTE—The letter c means that a CLINCHER tire is NOT made in this size; q that a QUICK-DETACHABLE is not made in this size, and s that a STRAIGHT SIDE is not made in this size.

These Tables are for your constant consultation and should be of great value in the conduct of your business—

S A V E T H E M

## Trucks

## MOTOR WORLD GUIDE

## Trucks

This table appears in the first issue every month. It is corrected every month and brought up to date.

Name and Model	Tires	MOTOR										TRANSMISSION										BRAKES																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
		Wheelbase in Inches		Price of Chassis	Cylinders		S. A. E. H.P.	Valves Placed	Spark Plug	IGNITION		Electric System—Type and Make	GOVERNOR		SPEED	FUEL SYS.		CLUTCH	GEARSET		Total Gear Reduction in		Rear Axle	Springs, Make	Universals, Make	Final Drive	Propulsion Taken By	Torque Taken By	Hand Brake	Foot Brake	Steering Gear																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
		Kind	Sizes in Ins.		Make Engine	No. of Crankshaft Bearings				Bore and Stroke	Cylinders		Make	Type		Make	Type		Make	Type												Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make	Type	Make



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**Name changed to "Giant"**

Name and Model	TIRES			MOTOR										TRANSMISSION					BRAKES															
	Sizes in In.		Kind	No. of Crankshaft Bearings	Cylinders	Bore and Stroke	S. A. E. H.P.	Valves Placed	Spark Plug	IGNITION		Electric System—Type and Make	GOVERNOR		SPEED		FUEL SYS.		CLUTCH			GEARSET			Total Gear Reduction in	Rear Axle	Springs, Make	Universals, Make	Final Drive	Propulsion Taken By	Torque Taken By	Hand Brake	Foot Brake	Steering Gear
	Front	Rear								Type	Make		Type	Drive	Make	Motor in r.p.m.	Truck in m.p.h.	Carburetor Make	Fuel Feed	Tank Location	Type	Make	Make	Type										
Menominee.	34x33	34x5	Cont.	3	4-3x5	22.5 b	L	L	L	Eisann.	b	h	ent	d-shift	Pierce.	1000	20	Smibg.	g	s	B-Li-pe	B-Li-pe	select unit-m.	3	7.0	Tumkn.	Tuthill.	Spicer.	worm.	rad-rl.	spgs.	int-r-w		
Menominee.	34x33	34x5	Cont.	3	4-3x5	22.5 b	L	L	L	Eisann.	b	h	ent	d-shift	Pierce.	800	15	Smibg.	g	s	B-Li-pe	B-Li-pe	select unit-m.	3	9.25	Tumkn.	Tuthill.	Spicer.	worm.	rad-rl.	spgs.	int-r-w		
Menominee.	34x33	34x5	Cont.	3	4-3x5	22.5 b	L	L	L	Eisann.	b	h	ent	d-shift	Pierce.	750	12	Smibg.	g	s	B-Li-pe	B-Li-pe	select unit-m.	3	10.3	Tumkn.	Tuthill.	Spicer.	worm.	rad-rl.	spgs.	int-r-w		
Menominee.	34x33	34x5	Cont.	3	4-3x5	22.5 b	L	L	L	Eisann.	b	h	ent	d-shift	Pierce.	1200	19	Smibg.	g	s	B-Li-pe	B-Li-pe	select unit-m.	3	6.0	Tumkn.	Tuthill.	Spicer.	worm.	rad-rl.	spgs.	int-r-w		
Menominee.	34x33	34x5	Cont.	3	4-3x5	22.5 b	L	L	L	Eisann.	b	h	ent	d-shift	Pierce.	1000	16	Smibg.	g	s	B-Li-pe	B-Li-pe	select unit-m.	3	4.7	Tumkn.	Tuthill.	Spicer.	worm.	rad-rl.	spgs.	int-r-w		
Menominee.	34x33	34x5	Cont.	3	4-3x5	22.5 b	L	L	L	Eisann.	b	h	ent	d-shift	Pierce.	1000	16	Smibg.	g	s	B-Li-pe	B-Li-pe	select unit-m.	3	4.7	Tumkn.	Tuthill.	Spicer.	worm.	rad-rl.	spgs.	int-r-w		
Menominee.	34x33	34x5	Cont.	3	4-3x5	22.5 b	L	L	L	Eisann.	b	h	ent	d-shift	Pierce.	1000	16	Smibg.	g	s	B-Li-pe	B-Li-pe	select unit-m.	3	4.7	Tumkn.	Tuthill.	Spicer.	worm.	rad-rl.	spgs.	int-r-w		
Menominee.	34x33	34x5	Cont.	3	4-3x5	22.5 b	L	L	L	Eisann.	b	h	ent	d-shift	Pierce.	1000	16	Smibg.	g	s	B-Li-pe	B-Li-pe	select unit-m.	3	4.7	Tumkn.	Tuthill.	Spicer.	worm.	rad-rl.	spgs.	int-r-w		
Menominee.	34x33	34x5	Cont.	3	4-3x5	22.5 b	L	L	L	Eisann.	b	h	ent	d-shift	Pierce.	1000	16	Smibg.	g	s	B-Li-pe	B-Li-pe	select unit-m.	3	4.7	Tumkn.	Tuthill.	Spicer.	worm.	rad-rl.	spgs.	int-r-w		
Menominee.	34x33	34x5	Cont.	3	4-3x5	22.5 b	L	L	L	Eisann.	b	h	ent	d-shift	Pierce.	1000	16	Smibg.	g	s	B-Li-pe	B-Li-pe	select unit-m.	3	4.7	Tumkn.	Tuthill.	Spicer.	worm.	rad-rl.	spgs.	int-r-w		
Menominee.	34x33	34x5	Cont.	3	4-3x5	22.5 b	L	L	L	Eisann.	b	h	ent	d-shift	Pierce.	1000	16	Smibg.	g	s	B-Li-pe	B-Li-pe	select unit-m.	3	4.7	Tumkn.	Tuthill.	Spicer.	worm.	rad-rl.	spgs.	int-r-w		
Menominee.	34x33	34x5	Cont.	3	4-3x5	22.5 b	L	L	L	Eisann.	b	h	ent	d-shift	Pierce.	1000	16	Smibg.	g	s	B-Li-pe	B-Li-pe	select unit-m.	3	4.7	Tumkn.	Tuthill.	Spicer.	worm.	rad-rl.	spgs.	int-r-w		
Menominee.	34x33	34x5	Cont.	3	4-3x5	22.5 b	L	L	L	Eisann.	b	h	ent	d-shift	Pierce.	1000	16	Smibg.	g	s	B-Li-pe	B-Li-pe	select unit-m.	3	4.7	Tumkn.	Tuthill.	Spicer.	worm.	rad-rl.	spgs.	int-r-w		
Menominee.	34x33	34x5	Cont.	3	4-3x5	22.5 b	L	L	L	Eisann.	b	h	ent	d-shift	Pierce.	1000	16	Smibg.	g	s	B-Li-pe	B-Li-pe	select unit-m.	3	4.7	Tumkn.	Tuthill.	Spicer.	worm.	rad-rl.	spgs.	int-r-w		
Menominee.	34x33	34x5	Cont.	3	4-3x5	22.5 b	L	L	L	Eisann.	b	h	ent	d-shift	Pierce.	1000	16	Smibg.	g	s	B-Li-pe	B-Li-pe	select unit-m.	3	4.7	Tumkn.	Tuthill.	Spicer.	worm.	rad-rl.	spgs.	int-r-w		



Bus.	Displacement	1275-128	1285-129	1300-131	1315-132	1320-133	1325-134	1330-135	1335-136	1340-137	1345-138	1350-139	1355-140	1360-141	1365-142	1370-143	1375-144	1380-145	1385-146	1390-147	1395-148	1400-149	1405-150	1410-151	1415-152	1420-153	1425-154	1430-155	1435-156	1440-157	1445-158	1450-159	1455-160	1460-161	1465-162	1470-163	1475-164	1480-165	1485-166	1490-167	1495-168	1500-169	1505-170	1510-171	1515-172	1520-173	1525-174	1530-175	1535-176	1540-177	1545-178	1550-179	1555-180	1560-181	1565-182	1570-183	1575-184	1580-185	1585-186	1590-187	1595-188	1600-189	1605-190	1610-191	1615-192	1620-193	1625-194	1630-195	1635-196	1640-197	1645-198	1650-199	1655-200	1660-201	1665-202	1670-203	1675-204	1680-205	1685-206	1690-207	1695-208	1700-209	1705-210	1710-211	1715-212	1720-213	1725-214	1730-215	1735-216	1740-217	1745-218	1750-219	1755-220	1760-221	1765-222	1770-223	1775-224	1780-225	1785-226	1790-227	1795-228	1800-229	1805-230	1810-231	1815-232	1820-233	1825-234	1830-235	1835-236	1840-237	1845-238	1850-239	1855-240	1860-241	1865-242	1870-243	1875-244	1880-245	1885-246	1890-247	1895-248	1900-249	1905-250	1910-251	1915-252	1920-253	1925-254	1930-255	1935-256	1940-257	1945-258	1950-259	1955-260	1960-261	1965-262	1970-263	1975-264	1980-265	1985-266	1990-267	1995-268	2000-269	2005-270	2010-271	2015-272	2020-273	2025-274	2030-275	2035-276	2040-277	2045-278	2050-279	2055-280	2060-281	2065-282	2070-283	2075-284	2080-285	2085-286	2090-287	2095-288	2100-289	2105-290	2110-291	2115-292	2120-293	2125-294	2130-295	2135-296	2140-297	2145-298	2150-299	2155-300	2160-301	2165-302	2170-303	2175-304	2180-305	2185-306	2190-307	2195-308	2200-309	2205-310	2210-311	2215-312	2220-313	2225-314	2230-315	2235-316	2240-317	2245-318	2250-319	2255-320	2260-321	2265-322	2270-323	2275-324	2280-325	2285-326	2290-327	2295-328	2300-329	2305-330	2310-331	2315-332	2320-333	2325-334	2330-335	2335-336	2340-337	2345-338	2350-339	2355-340	2360-341	2365-342	2370-343	2375-344	2380-345	2385-346	2390-347	2395-348	2400-349	2405-350	2410-351	2415-352	2420-353	2425-354	2430-355	2435-356	2440-357	2445-358	2450-359	2455-360	2460-361	2465-362	2470-363	2475-364	2480-365	2485-366	2490-367	2495-368	2500-369	2505-370	2510-371	2515-372	2520-373	2525-374	2530-375	2535-376	2540-377	2545-378	2550-379	2555-380	2560-381	2565-382	2570-383	2575-384	2580-385	2585-386	2590-387	2595-388	2600-389	2605-390	2610-391	2615-392	2620-393	2625-394	2630-395	2635-396	2640-397	2645-398	2650-399	2655-400	2660-401	2665-402	2670-403	2675-404	2680-405	2685-406	2690-407	2695-408	2700-409	2705-410	2710-411	2715-412	2720-413	2725-414	2730-415	2735-416	2740-417	2745-418	2750-419	2755-420	2760-421	2765-422	2770-423	2775-424	2780-425	2785-426	2790-427	2795-428	2800-429	2805-430	2810-431	2815-432	2820-433	2825-434	2830-435	2835-436	2840-437	2845-438	2850-439	2855-440	2860-441	2865-442	2870-443	2875-444	2880-445	2885-446	2890-447	2895-448	2900-449	2905-450	2910-451	2915-452	2920-453	2925-454	2930-455	2935-456	2940-457	2945-458	2950-459	2955-460	2960-461	2965-462	2970-463	2975-464	2980-465	2985-466	2990-467	2995-468	3000-469	3005-470	3010-471	3015-472	3020-473	3025-474	3030-475	3035-476	3040-477	3045-478	3050-479	3055-480	3060-481	3065-482	3070-483	3075-484	3080-485	3085-486	3090-487	3095-488	3100-489	3105-490	3110-491	3115-492	3120-493	3125-494	3130-495	3135-496	3140-497	3145-498	3150-499	3155-500	3160-501	3165-502	3170-503	3175-504	3180-505	3185-506	3190-507	3195-508	3200-509	3205-510	3210-511	3215-512	3220-513	3225-514	3230-515	3235-516	3240-517	3245-518	3250-519	3255-520	3260-521	3265-522	3270-523	3275-524	3280-525	3285-526	3290-527	3295-528	3300-529	3305-530	3310-531	3315-532	3320-533	3325-534	3330-535	3335-536	3340-537	3345-538	3350-539	3355-540	3360-541	3365-542	3370-543	3375-544	3380-545	3385-546	3390-547	3395-548	3400-549	3405-550	3410-551	3415-552	3420-553	3425-554	3430-555	3435-556	3440-557	3445-558	3450-559	3455-560	3460-561	3465-562	3470-563	3475-564	3480-565	3485-566	3490-567	3495-568	3500-569	3505-570	3510-571	3515-572	3520-573	3525-574	3530-575	3535-576	3540-577	3545-578	3550-579	3555-580	3560-581	3565-582	3570-583	3575-584	3580-585	3585-586	3590-587	3595-588	3600-589	3605-590	3610-591	3615-592	3620-593	3625-594	3630-595	3635-596	3640-597	3645-598	3650-599	3655-600	3660-601	3665-602	3670-603	3675-604	3680-605	3685-606	3690-607	3695-608	3700-609	3705-610	3710-611	3715-612	3720-613	3725-614	3730-615	3735-616	3740-617	3745-618	3750-619	3755-620	3760-621	3765-622	3770-623	3775-624	3780-625	3785-626	3790-627	3795-628	3800-629	3805-630	3810-631	3815-632	3820-633	3825-634	3830-635	3835-636	3840-637	3845-638	3850-639	3855-640	3860-641	3865-642	3870-643	3875-644	3880-645	3885-646	3890-647	3895-648	3900-649	3905-650	3910-651	3915-652	3920-653	3925-654	3930-655	3935-656	3940-657	3945-658	3950-659	3955-660	3960-661	3965-662	3970-663	3975-664	3980-665	3985-666	3990-667	3995-668	4000-669	4005-670	4010-671	4015-672	4020-673	4025-674	4030-675	4035-676	4040-677	4045-678	4050-679	4055-680	4060-681	4065-682	4070-683	4075-684	4080-685	4085-686	4090-687	4095-688	4100-689	4105-690	4110-691	4115-692	4120-693	4125-694	4130-695	4135-696	4140-697	4145-698	4150-699	4155-700	4160-701	4165-702	4170-703	4175-704	4180-705	4185-706	4190-707	4195-708	4200-709	4205-710	4210-711	4215-712	4220-713	4225-714	4230-715	4235-716	4240-717	4245-718	4250-719	4255-720	4260-721	4265-722	4270-723	4275-724	4280-725	4285-726	4290-727	4295-728	4300-729	4305-730	4310-731	4315-732	4320-733	4325-734	4330-735	4335-736	4340-737	4345-738	4350-739	4355-740	4360-741	4365-742	4370-743	4375-744	4380-745	4385-746	4390-747	4395-748	4400-749	4405-750	4410-751	4415-752	4420-753	4425-754	4430-755	4435-756	4440-757	4445-758	4450-759	4455-760	4460-761	4465-762	4470-763	4475-764	4480-765	4485-766	4490-767	4495-768	4500-769	4505-770	4510-771	4515-772	4520-773	4525-774	4530-775	4535-776	4540-777	4545-778	4550-779	4555-780	4560-781	4565-782	4570-783	4575-784	4580-785	4585-786	4590-787	4595-788	4600-789	4605-790	4610-791	4615-792	4620-793	4625-794	4630-795	4635-796	4640-797	4645-798	4650-799	4655-800	4660-801	4665-802	4670-803	4675-804	4680-805	4685-806	4690-807	4695-808	4700-809	4705-810	4710-811	4715-812	4720-813	4725-814	4730-815	4735-816	4740-817	4745-818	4750-819	4755-820	4760-821	4765-822	4770-823	4775-824	4780-825	4785-826	4790-827	4795-828	4800-829	4805-830	4810-831	4815-832	4820-833	4825-834	4830-835	4835-836	4840-837	4845-838	4850-839	4855-840	4860-841	4865-842	4870-843	4875-844	4880-845	4885-846	4890-847	4895-848	4900-849	4905-850	4910-851	4915-852	4920-853	4925-854	4930-855	4935-856	4940-857	4945-858	4950-859	4955-860	4960-861	4965-862	4970-863	4975-864	4980-865	4985-866	4990-867	4995-868	5000-869	5005-870	5010-871	5015-872	5020-873	5025-874	5030-875	5035-876	5040-877	5045-878	5050-879	5055-880	5060-881	5065-882	5070-883	5075-884	5080-885	5085-886	5090-887	5095-888	5100-889	5105-890	5110-891	5115-892	5120-893	5125-894	5130-895	5135-896	5140-897	5145-898	5150-899	5155-900	5160-901	5165-902	5170-903	5175-904	5180-905	5185-906	5190-907	5195-908	5200-909	5205-910	5210-911	5215-912	5220-913	5225-914	5230-915	5235-916	5240-917	5245-918	5250-919	5255-920	5260-921	5265-922	5270-923	5275-924	5280-925	5285-926	5290-927	5295-928	5300-929	5305-930	5310-931	5315-932	5320-933	5325-934	5330-935	5335-936	5340-937	5345-938	5350-939	5355-940	5360-941	5365-942	5370-943	5375-944	5380-945	5385-946	5390-947	5395-948	5400-949	5405-950	5410-951	5415-952	5420-953	5425-954	5430-955	5435-956	5440-957	5445-958	5450-959	5455-960	5460-961	5465-962	5470-963	5475-964	5480-965	5485-966	5490-967	5495-968	5500-969	5505-970	5510-971	5515-972	5520-973	5525-974	5530-975	5535-976	5540-977	5545-978	5550-979	5555-980	5560-981	5565-982	5570-983	5575-984	5580-985	5585-986	5590-987	5595-988	5600-989	5605-990	5610-991	5615-992	5620-993	5625-994	5630-995	5635-996	5640-997	5645-998	5650-999	5655-1000	5660-1001	5665-1002	5670-1003	5675-1004	5680-1005	5685-1006	5690-1007	5695-1008	5700-1009	5705-1010	5710-1011	5715-1012	5720-1013	5725-1014	5730-1015	5735-1016	5740-1017	5745-1018	5750-1019	5755-1020	5760-1021	5765-1022	5770-1023	5775-1024	5780-1025	5785-1026	5790-1027	5795-1028	5800-1029	5805-1030	5810-1031	5815-1032	5820-1033	5825-1034	5830-1035	5835-1036	5840-1037	5845-1038	5850-1039	5855-1040	5860-1041	5865-1042	5870-1043	5875-1044	5880-1045	5885-1046	5890-1047	5895-1048	5900-1049	5905-1050	5910-1051	5915-1052	5920-1053	5925-1054	5930-1055	5935-1056	5940-1057	5945-1058	5950-1059	5955-1060	5960-1061	5965-1062	5970-1063	5975-1064	59
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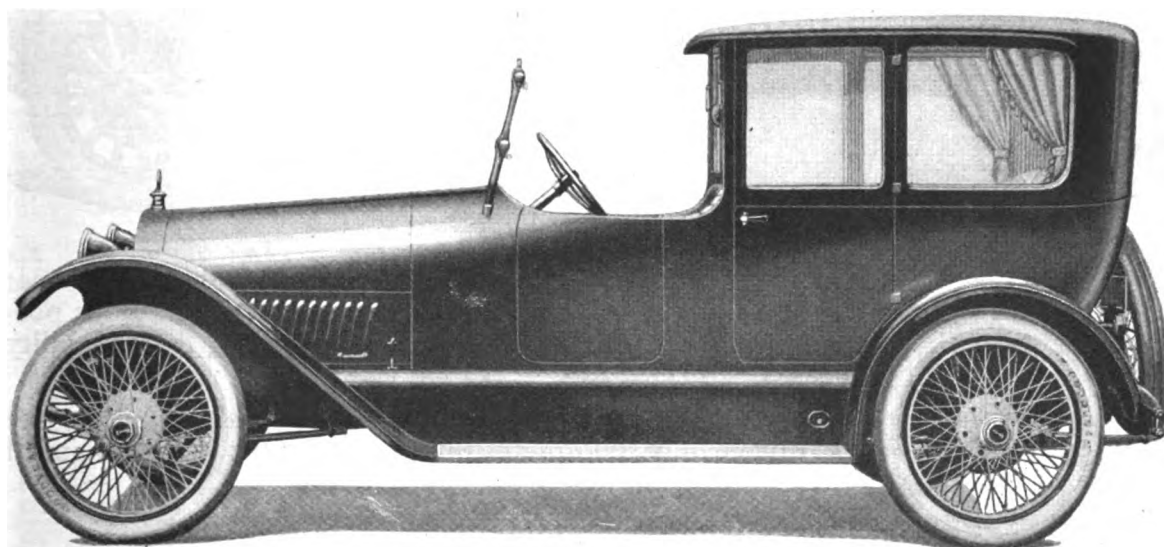
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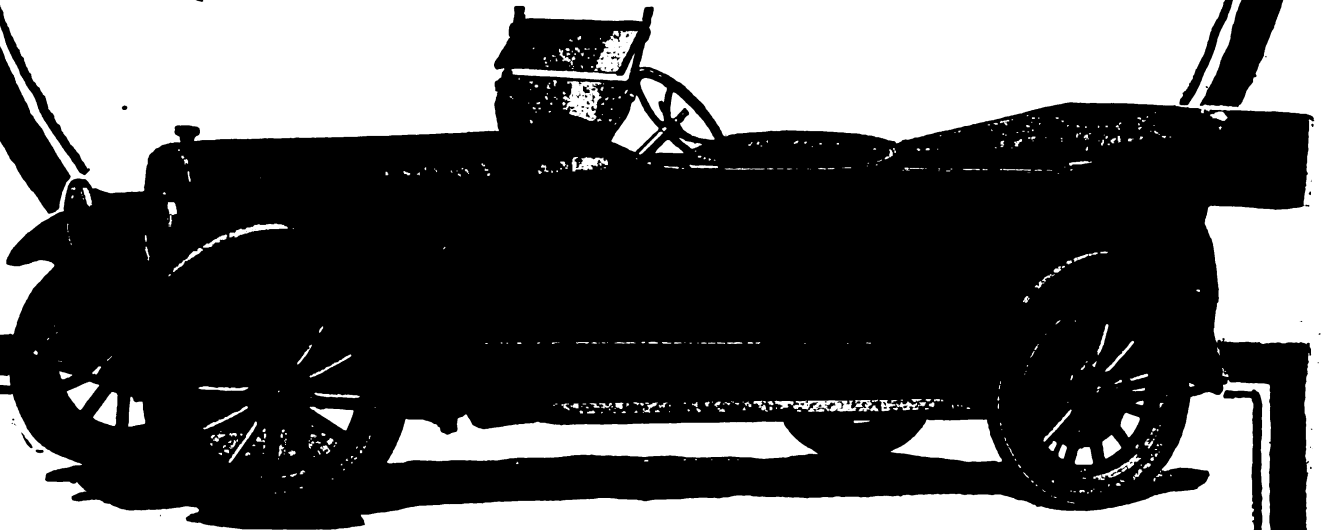
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**R**ECORDS such as the wonderful mid-winter endurance run of 40,000 miles, over indescribably poor roads, and under the most adverse weather conditions possible on the Chicago Speedway, have proved the efficiency and dependability of the New Series 19 Studebaker LIGHT-SIX.

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for  
DEALERS, JOBBERS AND GARAGEMEN

Volume LVI  
No. 11

NEW YORK, SEPTEMBER 11, 1918

Fifteen cents a copy  
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## Why Hudson Dealers Have Faith in the Hudson Future

Talk with a Hudson dealer and you talk with a man who has every confidence in the future.

He is satisfied that the Hudson foundation he is building on is a solid one.

He is not only sure of the quality of the car he sells but he is sure of the manufacturing and sales policies behind it.

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**W**ISE dealers are preparing now to get their share of the increased business which is in store when the war is over. So it is important that you keep in mind the recognized high value of Nash passenger cars and trucks. For the selling franchises for these Nash products are bound to be unusually attractive when the entire volume of our production is again available to buyers.

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# MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

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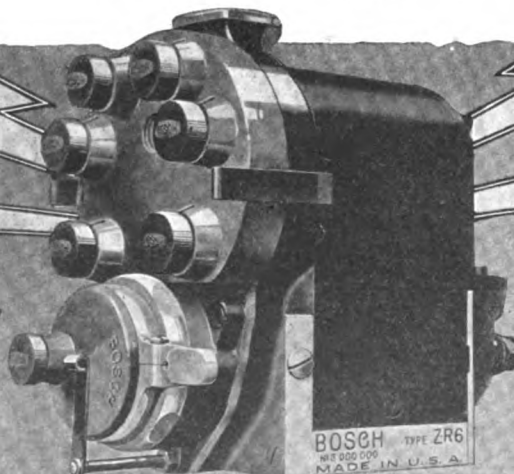
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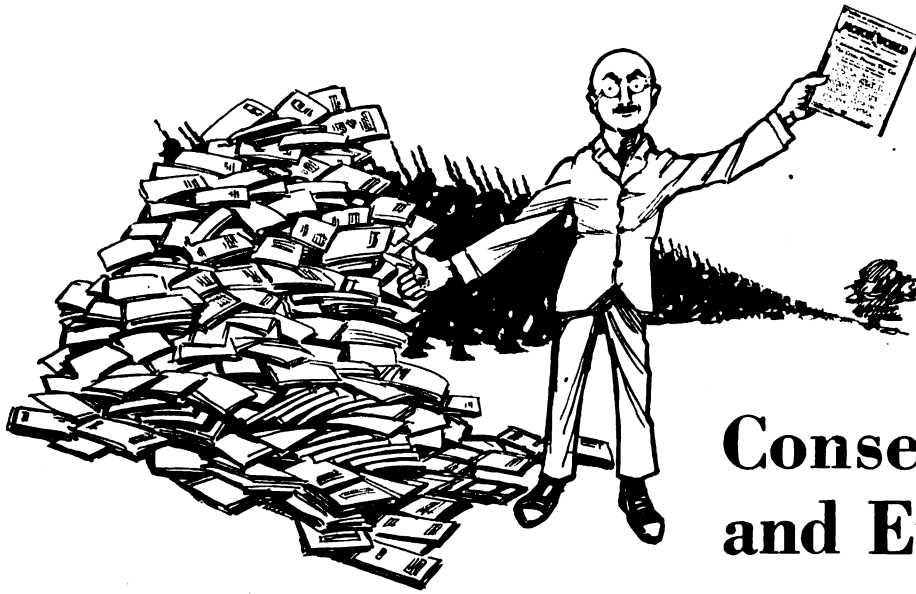
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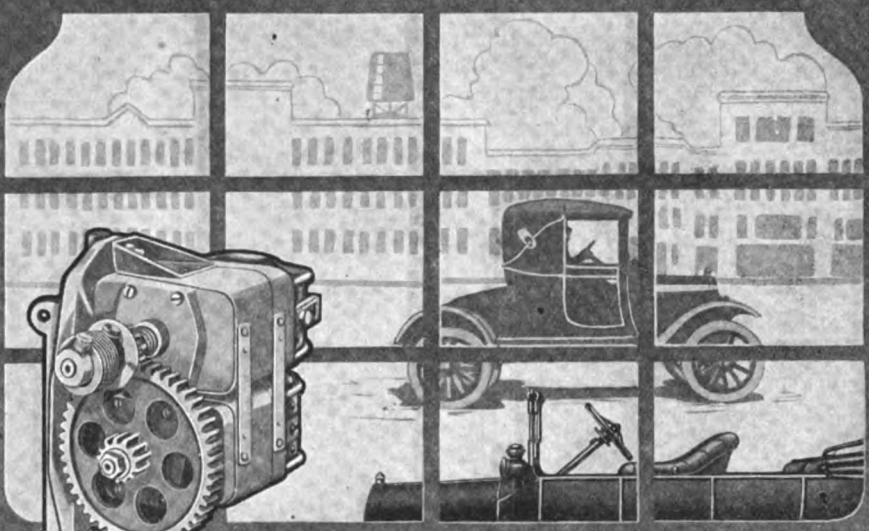
Dealers, jobbers and garage owners are asked by the War Industries Board to put their business on a war basis. That means conservation of man power, revision of departments, and promotion of practical economies wherever possible. We know that the trade has accepted this suggestion, and that policies and methods are being revamped accordingly. Manufacturers have received a similar request from the War Industries Board. Manufacturers will conserve man power and promote practical economies in the sales and advertising departments by cutting out needless expense in a number of their road salesmen, and the unnecessarily expensive printed matter.

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# MOTOR WORLD

for  
DEALERS, JOBBERS AND GARAGEMEN

Vol. LVI

New York, U. S. A., Wednesday, September 11, 1918

No. 11

## “The Girl He Left Behind Him”



# What's What in The "Show" Situation

**Don't Act Rashly—Go Easy and Wait a While Before Saying You  
Will Not Have an Automotive Exposition**

*The Abandonment of the New York and Chicago Shows Is  
Due to Conditions That Do Not Affect the Dealer Exhibitions*

**T**HE National automobile shows in New York and Chicago will not be held this year. This decision was made a few days ago by the National Automobile Chamber of Commerce.

The result is that many dealer associations have accepted this action as something to go by in their own local affairs and many dealers have been what one might call stampeded into declaring that no expositions should be held this coming season.

But what dealers should do is, first of all, delay such action. They should not too hurriedly declare themselves as against the holding of an exposition in their home city this season. It is easy not to do a thing after you have said you will do it, but it is hard to get things started again after you have said you will not hold an exposition.

## WAIT A WHILE

The thing for dealers to do is wait a while before taking any action, especially negative action. It may be that future developments will make it imperative that no expositions be held, and, on the other hand, matters may so develop that there will be great necessity for this form of dealer activity.

Therefore, wait a while. Don't go off half-cocked just because of the way things look to-day. Be sure you are right before you go ahead, and it is not possible to-day to determine absolutely what the right course is.

## CONDITIONS ARE DIFFERENT

One thing dealers should bear in mind, and that is that the conditions that caused the abandonment of the New York and Chicago expositions do not apply to the dealer exhibitions in the many cities of the country.

## GOVERNMENT TAKES PALACE

As a starter, the Government has taken Grand Central Palace, the New York exposition building, for a surgical reconstruction hospital, and securing another building would be a difficult matter.

*Dealers are not so handicapped in the matter of buildings, because when they can't get one they generally get another, and in some cases, where the weather is mild, tents are used.*

The New York and Chicago affairs were strictly passenger car expositions, and this year it is somewhat inconsistent to talk of a display of passenger cars when production is at such a low ebb.

*Dealers do not have to depend upon passenger cars for their expositions. The products of the car, truck, tractor, unit electric light, equipment, oil, tire and other industries centralize locally in the hands of the dealers, and they can use all these things in their expositions, which is something that has not been done in the National expositions.*

## RAILROADS NOT DISTURBED

When the New York and Chicago expositions are held many freight cars are needed to carry the show models around the country, and it is necessary to transport thousands of people to and from these cities.

*The local expositions, if held this year, would require little or no railroad service. The exhibits would be those of trucks, tractors, unit light plants, equipment and such things as the dealers had in their salesrooms and warehouses. A show model of a truck or tractor is not necessary.*

*All that would be needed in setting up a dealer exposition of automotive products would be that the dealer run a stock model from his place of business to the exposition building. If he had any passenger cars in stock and wished to put them in he could do so, but passenger cars would be a side issue.*

## LABOR NOT DISTURBED

The New York and Chicago expositions require great amounts of labor. Men must be at work weeks ahead of time fixing the building and hundreds of workers are sent out from factories.

*In fixing a dealer exposition the labor is mostly local, and not much is required. And none at all would be required from the factories, for the employees of the dealers could take care of everything necessary. Furthermore, the dealers' workers, so far as their draft qualifications are concerned, are all under the direction of the Government and the dealer cannot use any men for anything unless the Govern-*

ment does not need them. This disposes of the labor issue.

#### LIGHT AND HEAT

*The amount of coal consumed in lighting and heating the average dealer exposition is small.*

#### TRANSPORTATION OF VISITORS

In order to attend the New York and Chicago expositions thousands of men traveled thousands of miles, going to New York from all sections. Many always came from the Pacific Coast and far western Canada.

*The men who attend the dealer expositions come from a limited territory, and transportation facilities are not greatly taxed. Probably the attendance at the average dealer exposition could be handled by normal transportation facilities, with the addition of an extra car or so to some trains.*

#### PRODUCTS FOR EXHIBITION

The New York and Chicago expositions long ago discontinued their truck ends. Dealers have for several years been making trucks larger and larger departments in their expositions.

Tractors have had no part in the New York and Chicago expositions. There is every reason why they should be one of the major features in this year's automotive expositions of the dealers.

Unit light and power plants are rapidly becoming an automotive product. Dealers are selling them. At last winter's Twin Cities exposition there were eight or ten of them. They have never been a part of the New York and Chicago passenger car expositions.

Industrial trucks and tractors are likely to be an added automotive product. They have had no part in the two National exhibitions.

#### ENTIRELY DIFFERENT SITUATION

Wherefore, it is not difficult to see that the situations as regards the National and the dealer expositions are entirely different. The National expositions were devoted to passenger cars, a product of which little is now being made.

*The dealer expositions are devoted to everything the dealer sells, and this includes a great variety of merchandise which is highly essential to our greater national production.*

The National expositions used railways, labor and fuel. The dealer exposition of this year can be self-contained in its own town and would not interfere with the winning of the war.

#### NEED FOR EFFICIENCY EDUCATION

An automotive exposition this year could render a tremendous service to the country. The country needs to be speeded up. The farms must produce more with less labor. Business must use more machinery and fewer men. The labor-saving and time-conserving apparatus of the automotive trade is one of America's greatest essentials during the war period, which was admitted by the Government in its priority considerations.

#### SELL THE IDEA TO THE PEOPLE

The idea of how time and labor can be conserved must be sold to the people of the country. There are

thousands of farmers and business men who are bound by the shackles of precedent and who do not yet think in terms of greater production efficiency. They must be sold on the modern idea—and sold NOW. Now is the time this greater production is needed, not after the war. The after-the-war period will take care of itself.

What a benefit it would be to the country if hundreds of farmers could go to automotive expositions and be told what tractors can do for them, what the different designs are, what trucks are doing for farmers, what sizes should be used on different sized farms, how unit light and power plants can make the farm a better place to live, keep labor from rushing to the cities, save the labor of men by running machinery and how all these things can help the farmer produce more with fewer workers.

And what a benefit it would be to the country if the business man, who is short of labor, could learn how his business might be kept running during these trying times by the use of automotive apparatus.

*Not only must the idea be sold to the country, but the people must be taught the best ways to use this automotive apparatus. What good is a tractor to a farmer unless he knows how to use it? And it is foolish of him to use a truck in the wrong way, for he ruins his investment and decreases his production, which increases his costs.*

#### HELP KEEP BUSINESS GOING

The benefit is not, however, entirely to the users of automotive apparatus. The dealer will be benefited, and he SHOULD BE. He has been hard hit by the decrease in our production. His investment is in many cases in danger of being wiped out.

The country needs him now, to buy bonds and support the war, to supply the country with his merchandise. And he will be needed after the war to start our disorganized businesses again.

Therefore, he must be kept going if possible. And these expositions will help him keep the sign over the door.

#### HAVE AN AUTOMOTIVE WEEK

In connection with every automotive exposition there should be an automotive week. An "automobile show" is not of great value this year, because there are few cars to be sold. An "automotive exposition" is highly desirable if conditions do not prohibit it. And an "automotive exposition and automotive week" would be a tremendous benefit to the territory in which it was held.

#### HOW TO HOLD AN AUTOMOTIVE WEEK

An automotive week would be a regular seven-day university. Courses of instruction would be held in many lines for the benefit of dealers, repairmen, unskilled mechanics, farmers, business men, truck drivers and every one who had any need for instruction.

The battery men would give lectures with illustrations on battery construction, care and upkeep. This would make it possible for users of vehicles to save time and money and protect their investment.

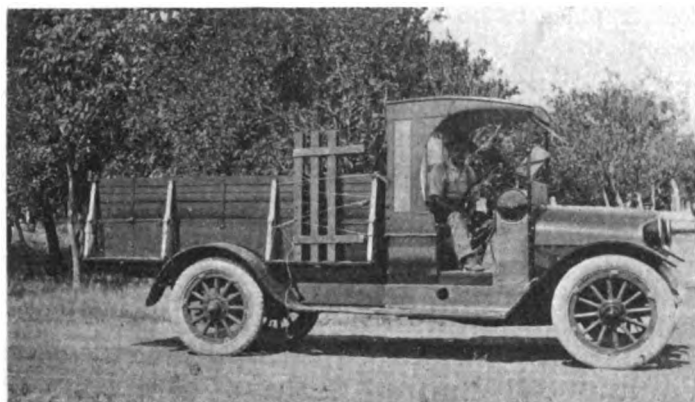
Electrical system men would explain their systems,

(Continued on page 35)

# Boosting Truck Hauling

## ON RURAL KANSAS ROADS

*Despite Immense Stretches of Dirt Highways, Enterprising Commercial Vehicle Owners Are Carrying on Profitable Long-Distance Trucking Business—Many in Direct Competition with Railroads !*



*Left—Reo farm wagon equipped with 8-in-1 body, after carrying shocks to thresher, was turned into grain carrier and took the wheat to the elevator. Right—Reo farm wagon in harvest field, carrying shocks to thresher, on farm of B. F. Lucas, Tonkawa, Okla.*

“**W**HAT'S the use of boosting truck hauling on rural roads in Kansas? Our roads can't be used by trucks without hard-surfacing; and we can't get hard roads without a constitutional amendment under which we can get larger benefit from the federal aid program.”

Thus spoke a member of the State Council of Defense of Kansas. Apparently the Highway Transport program was blocked in Kansas.

But some Kansans didn't believe the case was so hopeless. They wanted to start something anyway, to get Kansas into line if possible. And they started investigating.

No chance for truck freighting on Kansas roads? It couldn't be done over the dirt highways? Why, it was already being done in scores of communities. There are dozens of truck owners who every week make trips of 25 to 50 miles—and frequently of 100 miles—with truck loads. There are hundreds of truck owners who do little except long-distance business. Some of them are in direct competition with railroads; others are giving service to communities that are poorly served by railroads, or have no service of that kind at all.

It can't be done. H. Goer, 21 years old, has been doing it for 3 years—his “trade territory” being in a radius of 200 miles from Ottawa, Kan. He has just finished paying for his third truck, a 2-ton Service. About once a week he makes a trip between Kansas City and Ottawa. Every day one or another of the trucks is on the country roads, ex-

cept when roads are too muddy to travel.

Mud is the bane of the Kansas truck owner. It scares off many a man who would like to establish scheduled service, and get into the highway transport game. But mud hasn't seriously interfered with the prosperity of the hundreds of truck owners who do give rural highway service. Gover, for instance, has been caught in only three rains in 3 years—in each case being delayed half a day, without damage to loads. His weather eye guards against starting when a storm threatens, and he hasn't lost any business because he doesn't travel in all kinds of weather. He has lost some time—but the truck wasn't eating its head off while he waited for skies to clear.

Gover's business illustrates well the condition in Kansas that seems to call loudly for a thorough state organization to promote return-load bureaus and highway transport. Here is a sample week out of his work this summer:

Loaded Ottawa to Topeka, 62 miles; reloaded Topeka to Emporia, 72 miles; empty Emporia to Eureka, 56 miles; loaded Eureka to Burlington, 54 miles; empty Burlington to Iola, 68 miles; loaded Iola to Ottawa, 52 miles.

A large proportion of Gover's business is between other towns in the territory. It is to be noted that he charges for the run from Ottawa to the town where the load is. His basic charge is 25 cents a mile for the truck's running, or 50 cents a mile for the load. He charges, for instance, \$25 for a 50-mile haul. His regular rate for a load between Kansas City

and Ottawa—something less than 70 miles—is \$35. Here's the way the charge works out when the load does not originate or arrive in Ottawa: He received an order from a man in Burlington to take two loads to Eureka. Burlington is 60 miles from Ottawa; Eureka is 50 miles further on. Gover charged \$55 for the first load from Burlington to Eureka—giving him the 25 cents a mile to Eureka and back to Ottawa. He charged \$25 for the second load from Burlington to Eureka. All dirt roads.

Gover's father established a truck business, with teams, 45 years ago, and Gover specializes in household goods moving. His truck has no top; he carries tarpaulins and 500 lb. of packing material.

“My trucks are rated at \$25 a day; unless they are earning \$25 a day they stay at home,” said Mr. Gover. The only instances in which he cuts the price are when he splits the 25 cents a mile among customers whose jobs can be arranged on a route.

L. R. Bailey, with a Maxwell and an IHC, and J. B. Allen, with two Buicks and an IHC, serve Emporia territory much as Gover serves Ottawa territory. There is much business between Emporia and the oil fields around El Dorado, which is 70 miles from Emporia. And there is a marked tendency to use trucks rather than railroads for moving not only household goods but supplies. A considerable territory north of Emporia is now getting its merchandise largely by truck from Emporia because of poor connections of railroads from Topeka



and Kansas City. Shipments from Kansas City require three to five days, by roundabout route, and transfer from line to line. Dozens of truck owners in the smaller towns make two or three trips a week into Emporia for merchandise from wholesale houses for merchants.

Emporia is one of the smaller towns that are getting business from a distance because of ability to deliver by truck. The big commercial center of southern Kansas—and of the Kansas oil fields—is Wichita.

A motor truck service, running on definite schedules, has been established between Wichita and the oil fields this summer by Rea & Bell, two enterprising young men, with Reo trucks.

The trucks carry office furniture and equipment, building materials, oil well supplies, household furniture and merchandise.

The basic rates are cheaper than express; they run \$1 a mile for household goods; 50 cents per 100 lb. on general merchandise from Wichita to El Dorado and 40 cents per 100 lb. from Wichita to Augusta. To these rates the war tax of 3 per cent is added.

Trailers are used occasionally. Drug wholesalers are especially good patrons. The company gives better service than express except on perishables. Rain interrupts service, but so far there has been no complaint from customers because of delays to muddy roads—the service even with such interruptions averaging better than freight or express.

The congestion of railroads in the oil fields, and especially the congestion at

terminals, where facilities for hauling goods from the freight depots are inadequate, and where goods move slowly through the freight houses, are the chief obstacles to quick railroad service.

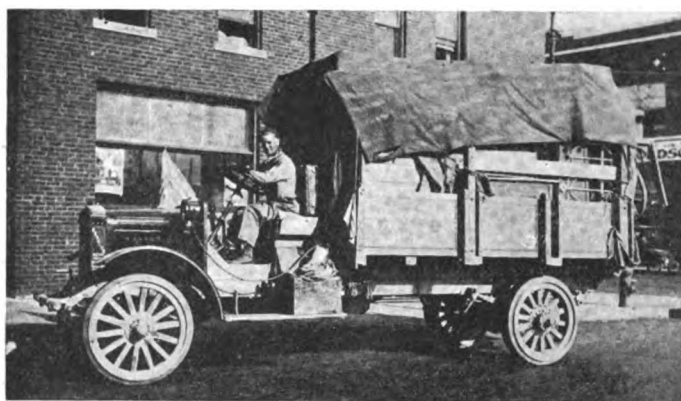
Cold weather and snow offer fewer obstacles to truck use on country roads than the wet weather. Many truck owners did not miss a day during the severe weather of last winter.

The most striking object-lesson on use of highways by trucks has been the hauling of grain to elevators this summer. The guaranteed price for wheat removes any reason for a farmer holding his grain; the millers have needed the new wheat to grind.

The tractor, the truck and the automobile have all helped to expedite wheat cutting and stacking.

And trucks have been a Godsend to many a farmer, elevator man and miller, getting the grain into circulation direct from the thresher in a surprisingly short time. Scores of Ford trucks have hauled grain this summer, and many larger trucks have been put into this service.

J. R. Anderson, with a Reo, handled



*H. Gover and 2-ton Service truck, which makes frequent trips between Kansas City and Ottawa. The load shown has a piano brought from near Ottawa for a Kansas City store*

wheat four times as fast as the wagons; for instance, he drove the truck under the spout of the thresher, received a load—53 bushels and 20 lb.—and made the trip to the mill and back in 35 min., four miles.

The wagons, carrying almost exactly the same load—55 bushels, in fact, took two hours for the round trip. Farmers, distressed for lack of teams and men, worrying over having to store threshed grain and over danger of rain, opened their eyes at the way trucks were getting that wheat out of the way. From many sources reports came of trucks that were replacing four horse-drawn wagons in hauling grain.

## Putting Truck Lines on a Paying Basis

DENVER, COL., Sept. 6—Putting every motor truck transport line in Colorado upon a paying basis is a problem being worked out systematically by the Highways Transport Committee of the Colorado State Council of Defense. The magnitude of this task is indicated by the fact that a thorough investigation by the committee showed not a single truck line in the state making an actual profit up to two months ago, at which time there were about 100 lines operating throughout the state.

Faith in the success of the committee's efforts to improve this situation is suggested by a survey showing another 100 motor transport lines started during the last two months, practically all under recommendations and advice of this committee.

Slipshod methods of determining rates based upon operating expenses are cited as the main cause of this unprofitable development of the motor transport business here. In fact, some lines have even been losing money because of failure to figure depreciation and insurance among operating expenses.

A standard system of rates fair to truck line operators and also to their customers is the committee's idea of overcoming this error. A rate midway

between the freight and express rates by rail has been found to meet both these requirements, and this system of determining rates is being urged by the committee until legal steps are taken to establish fixed rates between all points, or a certain rate basis compulsory upon all motor lines.

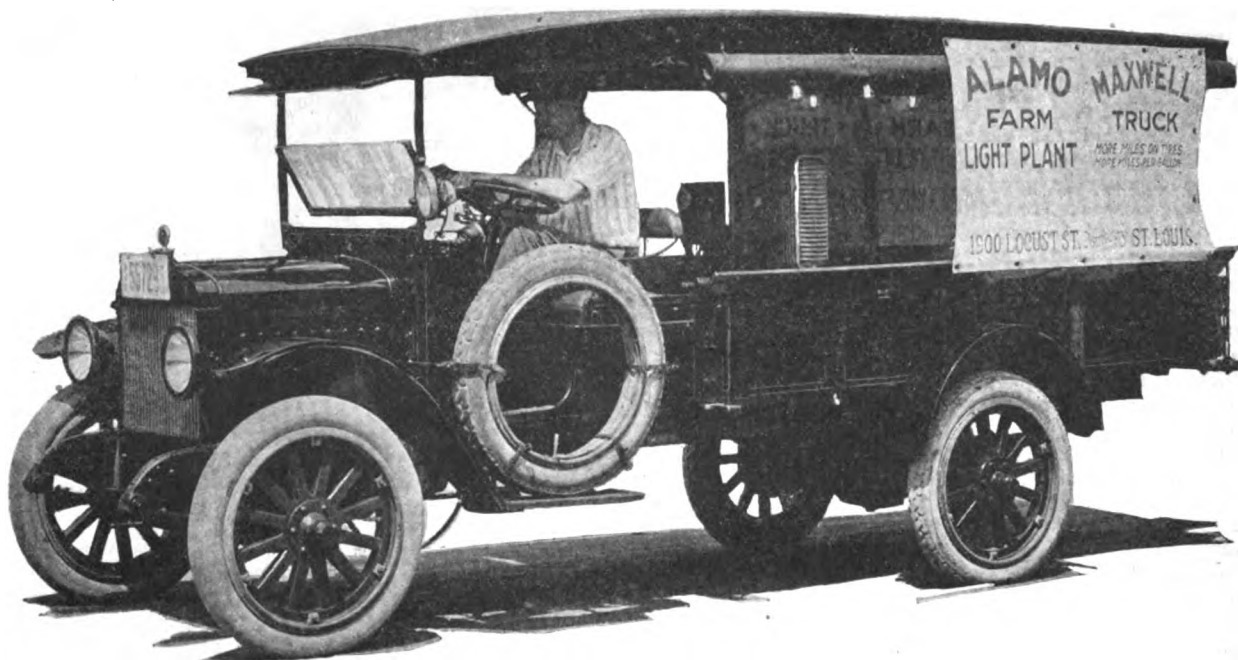
Getting a well-balanced, dependable volume of transport business is another need being studied by the committee, and its campaign to induce more extensive use of the motor transport industry is already bringing results.

Special emphasis is being put upon the return-load enterprise wherever at all practical, and this movement is expected to prove a powerful force toward standardizing the motor freight and express system in several respects. The committee is also taking up the promotion of rural motor express lines from city into country communities, as distinguished from the town-to-town lines, and is seeking to show farmers the value of motor trucks owned and operated co-operatively by a group of farmers not justified in operating trucks individually and not served by any established line reaching their community. The committee predicts that Colorado will have several hundred additional motor transport lines of

various classes in profitable operation within a year.

This committee consists of Chairman Tom Botterill, Pierce truck distributor; S. E. Norton, G. M. C. distributor; L. K. Cameron, Diamond-T. distributor; W. W. Barnett, Federal and Stewart distributor; W. P. Tyler, salesman for Tom Botterill; S. L. Sweet, Colorado agent of the United States Bureau of Markets; Pyke Johnson, of the State Highway Commission, and Secretary H. R. Welter, representing the State Council of Defense itself.

The efficient, harmonious and unselfish activities of the motor tradesmen on the committee are highly praised by the non-dealer members. "These men not only work together in general as united, patriotic citizens instead of as competing dealers might be tempted to work, but they even individually advise prospective customers against buying trucks where the outlook is unfavorable for profitable business returns," said one of these other members in an interview with the Motor World representative. "The only advantage any one of these dealers has tried to take of another has been in seeking to outdo the other committee members in genuine service to the state and nation."



*This is the Maxwell truck the Weber Implement & Automobile Co. fitted up as an Alamo farm lighting system demonstrator*

### *State Fair Exhibits Will*

# Sell Farm Lighting Systems

**T**HE open season for Fall Fairs is on. They are being held all over the country. The farmers flock to these fairs in droves.

Wide-awake automotive dealers are taking advantage of the fairs—the dealer about whom this story is written sold a farm-lighting system over the long-distance 'phone. The fair exhibit did it.

**T**HE Weber Implement & Automobile Co., St. Louis, exhibited two Alamo light plants at the State Fair at Springfield, Ill. Eugene A. Brunk, who had charge of the exhibit, who is an experienced farm goods salesman, reports that his exhibit was crowded at all times. He turned in several orders he obtained on the spot, and the morning this story was obtained from William A. Flamm, department manager for the Weber company, Flamm was called to the long-distance telephone and received an order from a farmer who had seen this exhibit. This order came from a town that Mr. Flamm says he never heard of before.

Brunk is enthusiastic over the agricultural fair as an advertising place for the lighting plants. At the Illinois fair his exhibit was housed in a leased tent, and aside from the lighting plant he had there a Keck-Gonnerman tractor, threshing separators and some smaller merchandise.

#### **They Monopolized Attention**

The lighting plant and the tractors monopolized the attention, for the future owners of those are much more numerous than are separator owners. His tent was completely lighted by the Alamo plant set as it would be on a farm. The second plant, mounted on a truck, moved about the fair grounds and supplied light where needed. Brunk make his report to Flamm.

"Brunk told me," said Flamm, "that there was not an idle moment during the entire period the grounds were open, and even after hours those who had exhibits on the ground and were busy during the day came around to see what the plant could do.

"There is a surprising lot of farmers interested in these plants and who know that they can afford the comfort and convenience of comparative luxuries in their farm homes.

"While we have a long list of lighting prospects as a result of this exhibit, we know that those we have are only a small fraction of the persons we interested. The order I just received over the telephone is one of these. We had not heard

of this man or his town. He said he saw our plant at the fair and heard the demonstrator tell how it worked. When he got home and figured it over, he called up and told us to send him one.

"It is like this at a fair," continued Flamm. "Practically every farmer who goes to a State Fair can afford a plant. But he has only one or, at most, two days there. There is much that he wants to see, especially stock. He knows in advance what he wants to see in the fixed exhibits. There are questions to be decided there, or as a result of what he sees, that mean much to his business.

"So his mind is fairly well settled as to what things he is going to consider. But he takes time to look around at the novelties and things that he did not know about. The lighting plant probably is one of these. It is more than likely that he knew about lighting plants, but also it is likely that he had not really thought of seeing one there. He comes along and sees the lights, stops to hear the talk of the demonstrator, gets some of the circulars, and when he gets home he thinks it over. Perhaps the money must come from the crops yet to be sold. So it may be months before he sends in his order. We will be getting orders from this fair exhibit until the next fair comes.

"This week we are exhibiting at the Carlinville, Ill., fair, and later we will exhibit at the St. Louis County Fair. We will take in any other fairs we can arrange to get to or any harvest home picnic where exhibits of any kind are made.

What we seek is a place to show our plant, working, to the greatest number of rural property owners.

"With the tractor the situation is somewhat different. Nearly every farmer is familiar with the work of tractors and is counting on buying one or more of them some time. He knows the names and something about each. When he sees an exhibit he gets to the point, asking about power, grades, requirements as to operating and dozens of other questions. Because of this fact, the exhibitor gets in personal touch with him and gets his name and the prospect is likely to be more tangible than that for the lighting plant."

Another phase to the lighting plant exhibit, according to Flamm, is that it has stirred interest of prospective dealers.

"When we went into this business," said Flamm, "we expected to find the automobile dealers the men to handle the business. But the automobile men were too busy. They were selling cars right and left. The sales were larger and more easily made. The motor car is an established article of merchandise and buyers know what they want to find out and buy quickly. But the lighting plant is still pioneering and sales often are slow. The farmer is likely to want to think it over, talk with the family and the same man who would buy a car in an hour will be two months making up his mind on the lighting plant. This is so of the average prospect who is solicited. The men who see the plant

at the fair are apt to act more quickly. At least that part of them that we hear about.

"The recent orders for reduced production of motor cars has changed conditions and we are lining up motor car dealers to sell lighting plants. They realize that they must have something to carry the overhead, even if it is not as quick of action as the motor cars. So they are looking around. Many of our motor car dealers called at our exhibit at the Illinois fair and were impressed, not only with the lighting plant but with the tractor and Maxwell truck. The latter became a part of the exhibit incidentally because the Alamo plant was mounted on it.

"We are hearing from these dealers now and we expect to have a good many of them working this winter. The service problem on the lighting plant is the same as with a motor car, only much more simple. In making a sale, we require that the buyer do his own wiring. This is easily arranged, as a garageman can do it to the satisfaction of the insurance companies, which is the test to be met. In most small towns the service work is done through a controlled garage or one with which a special arrangement has been made. This garage always is willing, nowadays, to take up the wiring work. Of course, if there is no one near who will do the work at a reasonable price we will supply some one from our force, but we discourage that because of scarcity of men, and usually the railroad fare is added expense.

"The best advertising, aside from fair exhibits, is the fitted truck. The truck we are supplying for our salesmen and which we require of dealers carries a complete outfit. In the top and on the truck are as many powerful incandescent lights as space can be found for. When it moves about the country at night all of these lights are ablaze. As a prospect recently told one of our salesmen, 'I could see you coming nine miles down the road.'

"That truck with its traveling exhibit is a big advertisement. The salesman carried in his truck extension wires and lamps so that he could run the machine to its full 100-light capacity, which means using both generators and batteries, and when he gets a chance to light up a picnic or a lawn party he is the happiest salesman on the road. Just think what an impression an electrically-lighted lawn social means in a community that is 10 miles from an electric wire.

"There is one strong local dealer point about the lighting plant. No dealer ever should require help from the home office.

The plants are so simple that a man familiar with motor car batteries and engines should get the idea. There are no fine points to be decided about the selling, such as come constantly in advising a buyer about a truck best for his business or a tractor for his family. The dealer and the garageman can supply all of the mechanical knowledge required. There should be no call for help."

## *Colorado Building Return Loads System*

### **Five Truck Lines Now Operate Over 30-to-70 Mile Routes—Committee Assisting in Development**

DENVER, Sept. 6—The return load system of motor truck transport is being built up efficiently in Colorado under the direction of the Highways Transport Committee of the Colorado State Council of Defense. Five motor truck lines, covering 30 to 70 miles, are already handling a substantial amount of return load business. Although the two-way haulage has not yet become extensive for every trip, the educational campaign and other efforts of the committee are counted upon to bring this rapidly to where it belongs, and also to accomplish the same profitable and needed service for scores of other lines now operating almost entirely on a one-way basis. For this purpose, the committee has established return loads bureaus in 22 towns in eastern Colorado, and will organize the western half of the state as rapidly as possible.

Two of the lines now doing considerable return load transporting are between Denver and Fort Collins, 70 miles. The other three are between Denver and Evergreen, 30 miles; Denver and Greeley, 56 miles; Colorado Springs and

Pueblo, 45 miles. There are intermediate shipping points and thickly settled farming communities along all these routes, and the transport committee expects the return load enterprise to grow rapidly along every one of them.

The return load bureaus already organized are at Denver, Fort Collins, Loveland, Berthoud, Longmont, Greeley, Sterling, Fleming, Haxtum, Holyoke, Julesburg, Sedgwick, Fort Morgan, Brush, Pueblo, Rocky Ford, La Junta, Lamar, Las Animas, Colorado Springs, Limon and Hugo. Sterling, Greeley, Fort Collins, Denver, Colorado Springs and Pueblo are district headquarters, covering one to 21 counties each, with general supervision of the remaining bureaus in the districts. Additional bureaus will be organized in practically all these districts, besides those yet to be appointed in the three districts of western Colorado. The district boundaries are practically the same as those of the present state highway districts, and all the motor transport routes are being developed in connection with main state highways definitely established.

A blanket rate for one-way hauling has been worked out by the transport committee on the basis of one-half the combined railroad freight rate and railroad express rate between two given points. This has been found to provide a fair profit for the truck lines, and also to give shippers and consignees the benefit of express service (in some cases with even more prompt delivery than furnished by railroad express) at less than railroad express rates. As soon as sufficient return load business can be established on a daily basis, this motor express rate can be reduced and still give the motor transport lines a reasonable profit.

While the transport committee now has no authority to dictate any rates, the recommendation of this blanket plan above outlined for one-way haulage has been acceptable in all cases thus far. A legal system of rates is one thing the committee will strive to have established by proper state legislation or necessary federal authority. Two other main points of achievement aimed at are authority

(Continued on page 44)

□   □   □   □   □

*There's a very real and very important reason why the  
automotive dealer makes the best tractor representative*

□   □   □   □   □

# Two Old Implement Men Say: “Automotive Dealer!”

## BECAUSE

- |  |                                      |
|--|--------------------------------------|
| 1 — He Thoroughly Understands Engines    | 4 — He Knows How to Use Diplomacy    |
| 2 — He Is Able to Give Farmers Real Help | 5 — He Is Adequately Financed        |
| 3 — He Is a Thorough-going Salesman      | 6 — He Realizes the Need for Service |

**E**VEN agricultural implement distributors are admitting that automotive dealers are the logical and best equipped agents for farm tractors.

They acknowledge that few implement retailers are able financially to carry the proper amount of stock—either the tractors themselves, or even the parts.

The farm implement dealer has no service department—the manufacturer usually assumes that function—and guards it.

The implement dealer sells to the farmer and then lets him shift for himself, at least until the manufacturer can aid him. A tractor is like the sheriff's gun—when it's needed, it's needed “mighty bad.”

A tractor left in the middle of a field with the harvest on and no help in sight, save from a distant manufacturer, is a sorry sight.

### What the Farmer Hands the Implement Man

No one knows this better than the farmer. He's been telling it, in full detail, to the implement man, who has told it to the distributor and the distributor knows it's true, wants to keep in business and so is picking out the automotive dealers to buoy him up. And he's going to keep on picking 'em out.

Praise for the automotive dealer as a tractor agent is sounded by men in two Philadelphia concerns which deal in both farm implements and tractors.

One is F. N. Supplee, manager of the tractor department of the Hartz Machine

& Tractor Co., distributor of LaCrosse Happy Farmer tractors in Pennsylvania territory. The other is the junior partner in the firm of Mallalieu & Conrey, distributor in virtually the same territory for the Heider and the Lauson machines. This territory includes portions of near-by states.

### Interest Doesn't Stop After Sale Is Made

Supplee stresses the importance of the motor car dealer's selling ability and the service his house gives after the sale is made.

Conrey emphasizes the fact that his firm has found the automotive dealer positively superior as a salesman and better equipped as to facilities for handling tractors and tractor parts.

Here is the way Supplee summarizes the reasons why he is selecting, as rapidly as he can, the motor car dealer with service station or garage to handle the Happy Farmer:

*“The automotive dealer thoroughly understands motors and specializes in them.*

*“He is able, through this specialized knowledge, to keep the farmer to whom he has sold a tractor ‘set straight.’*

*“He knows how to make repairs and has the facilities to make them promptly.*

*“He is a thorough-going salesman and will not wait for the customer to ‘drop in.’*

*“He can handle the farmer from a good business standpoint.”*

Supplee thus accentuates the necessity for the tractor salesman's being a hustler:

*“Experience has taught us that there is only one way to sell tractors to the practical farmer—that is, you must carry your story to him in person. The gentle-*

*man farmer, the man who farms for pleasure or as a fad, will come to the dealer, but the real agriculturist must be sought—and gone after hard. This is the way to clinch the bargain. The motor car salesman knows how to do this sort of thing through long practice. It's the only basis to-day on which a live tractor business can be conducted.*

*“The automotive dealer must approach the prospect not only with the argument that he has a time and labor-saving machine, but he must be able to show the hard-working, shrewd agriculturist that he is ready to solve his most puzzling labor and stock problems for him through the tractor's use.*

*“The time may come when the farm implement dealer—the retailer—will have to put in a service department like that of the automotive dealer, but it is not here yet.”*

### 15 Dealers Ordered 41 Carloads of Tractors

*“That our motor car dealers are active,” said Supplee, “may be learned from the fact that from five orders have come in thus: One ordered fifteen carloads, another five, two others ten carloads between them and the fifth one carload. The first-mentioned dealer is one of our ‘blockmen,’ and his order includes the supply for four sub-dealers. We use these ‘blockmen’ in our distributing system, and each is responsible for three or more dealers in each county where his operations extend.*

*“We are having many applications and inquiries from automotive dealers lately, and we are looking for them constantly.”*

Through giving glimpses of the methods whereby customers are sought, Supplee affords hints to motor car



dealers on acquiring trade information.

"We obtain lists of motor car dealers having garages or service stations in our territory," said Mr. Supplee, "and we circularize them, as we do the implement dealers."

"One method which has brought us in lately 25 motor car dealers is having an oil salesman make inquiries on his rounds as to the possibility of the different concerns desiring a tractor proposition. He keeps in close touch with us. Thus far he has brought us in no implement dealers, however."

"We make a survey of the state and we are now eliminating from our canvass all the coal regions, because our surveyors have informed us that no tractors can be sold thereabouts, or even operated, should one or more be sold. It is necessary to know the ground so as not to waste effort."

"Nothing can be done by any of our dealers in the way of a tractor transaction without supplying us with a copy of such plan. In the case of a sale the dealer is checked up by giving us the motor number, the conditions of the sale and the buyer's name and address. Sales are made in the usual manner—shipped

on sight draft with bill of lading attached."

"The farmer has to be handled more carefully and diplomatically than any other customer," said Conrey, of Malla-lieu & Conrey. "The automobile dealer usually knows how to do this. Then, too, the dealer in motor cars usually is financed so he can carry a large enough stock of tractors and tractor parts. Not many farm implement retailers have the facilities, either financial or physical."

"I think the automotive dealer is the best agent for the tractor for these reasons and the additional one, that he is a first-rate salesman, as a usual thing. He gets about more than the implement dealer. I believe an increasing number of automobile concerns will be handling tractors within a very short space of time."

"As regards service to the tractor purchaser, as an additional inducement to buy a machine, the dealer able to carry the most parts and to offer the quickest repairs is the one to be selected. One has to be careful about making shop charges to farmers though. They, as a rule, know little or nothing about a repairshop's expenses in labor, material

and time. Supposing a tractor were to break down in a field, with the nearest repairshop miles from the farm. After communication had been established between the farm and the repairshop, a bill for sending out a service wagon and a repairman would be enough to stagger the farmer."

"If an equitable bill for repairs in a case of that kind were presented by an automobile dealer, it is not likely that another tractor would be purchased in that neighborhood from the same dealer in years. Rural feeling spreads in instances like that. But I am sure the farmer can be educated by the automobile dealer with patience and such service as can be given."

"Great care should be taken by the dealer not to let the farmer run up a big repair bill at the start when, through ignorance of a tractor's mechanism, he might burn out sockets and even crystallize a crankshaft by keeping the machine driving without lubrication and after a minor accident. It is better to give complete service in the way of careful instruction at the beginning. No one is better suited to do this than the automotive dealer."

## *Lack of National Advertising a Serious Handicap*

Davis Has Had 10 Years' Experience and He Ought to Know

TRACTOR salesmen who do not have the support of national advertising of the machines they seek to sell labor under a serious handicap, according to C. C. Davis, of Bloomington, who has had 10 years' experience as a motor car salesman, and who has taken up tractors in the central Illinois territory.

He recommends salesmen to handle only lines which have such advertising support, coupled with reliability of production and successful and economical operation. To attempt to sell a tractor which is practically unknown is almost hopeless in the opinion of Davis.

Given a machine that has been extensively exploited in various lines of periodicals so that it is certain that some member of the prospect's family has read the ad, it is then up to the salesman to follow up this advantage by means of demonstrations and convincing arguments.

Davis favors demonstrations, and never fails to enter all public exhibitions in his territory that are arranged, either by the dealers themselves, the business men's association, county fair or other organization.

He believes that competition is the life of trade, and that the tractor that is not seen at such exhibitions is injured in the opinion of the community, the inference being that the machine will not measure up to its competitors.

Once entered in a public demonstration, the machine must be closely watched by the salesman in order to detect those who display an especial interest.

It is certain that the prospect who is seriously considering the purchase of a tractor has been making some inquiries and is studying up on the proposition.

He has perhaps partially made up his mind as to the general style or make-up of the machine which he thinks best adapted to the needs of his farm and will buy the one that has the greatest appeal.

It is now up to the salesman. Davis observes that the man who sells tractors sadly misses the help that the passenger car salesman usually receives from some member of the prospect's family. In the majority of sales of passenger cars the wife, son or daughter has started the ball rolling before the husband and considered the subject.

The salesman has the car sold to the wife and children long before the head of the family is ready to sign the check. This gives the salesman a powerful aid.

This is not true in tractor salesmanship. The farmer may be urged along by the sons, but the wife and children, in most instances, are indifferent.

In fact, they are too frequently antagonistic.

They have become attached to the horses and do not wish to see them displaced. They also fear that the investment in a tractor may prevent the purchase of a piano or set of furniture or other furnishing of the house, upon which the wife and daughter have set their heart.

The farmer, knowing best the needs of his farm work, may feel the necessity of the tractor, but in some instances

fears to arouse the animosity of the wife, and too often listens to her objection rather than have a family row.

The shrewd tractor salesman keeps his prospect away from the house and secures the signature to a contract in the field or in the city if possible.

After the tractor has been shown in operation and the economy demonstrated, the wife and children are usually content and then realize that the money the machine is saving means more luxuries for them.

If it should develop that the farmer will not buy both a passenger car and a tractor, as sometimes occurs, the tractor salesman is still further handicapped, as his family naturally prefer the motor car from the pleasure they derive.

It then requires the real test of the salesman of the tractor to point out the money and time-saving advantages of the tractor and the comparison with that of the passenger car.

Farmers are peculiar prospects and Davis asserts that no two can be given the same method of handling. It requires careful study of the peculiarities of each.

The successful tractor salesman must be patient, shrewd, observant, diplomatic and thoroughly posted upon the merits of his machine and farm conditions in general. We must not be caught napping in any particular.

The competition is keen and many former salesmen of passenger cars are now flocking into the tractor and truck field. The sleeper cannot succeed.

# "It's a Nice Baby, BUT"—

Must the Tractor and Truck Industry Go Through the Foolish Knocking Period That Did the Car Industry So Much Harm?

*By Ray W. Sherman*

**R**EILLY, who sold automotive wares in and about Callawassa; Tommy Trumbull, his sales manager; Eddie June, of the truck department, and Billy Long, of the newly formed tractor division, were all at the tractor demonstration on the Masters farm eight miles out of Callawassa.

Reilly had drawn a Strongman tractor out on a Sayanna truck and the Reilly organization was wandering around the field, watching the machinery work, talking to the farmers and listening to the conversation and sales orations of the various representatives.

"—and now," continued one of the salesmen for a tractor, "we come to one of the most important reasons why our tractor is the one you want. It has only two cylinders yet does all the work that can be done by any of the other tractors on this field. With two cylinders you have only half the number of parts in a four-cylinder, you consume only half the fuel and you save half the trouble." And he ran on and on and on and the farmers listened attentively.

"Well," said Tommy Trumbull, as they moved along the line, "we might as well quit the business with this four-cylinder Strongman of ours. What's the use of trying to sell it if everything's as bad as this two-lunger paints it?"

"Wasn't that punk?" ejaculated Reilly. "Did you ever hear such a mess of talk before?"

## Old Practice of "Knocking"

"Sure I did!" said Tommy with a smile. "That's the old stuff we used to peddle around Callawassa before we got some sense in our heads and the members of the trade association said they would fire the first salesman who was caught panning a car of a rival make."

"Yes, it is the old familiar stuff, isn't it?" was Reilly's reply. "It's so long since I've heard much of it that I had begun to think the breed was extinct, but evidently it is springing up anew in the tractor business."

"That guy was an old-timer in the tractor business," said Tommy. "I know him. He isn't an automobile man."

"Well, whoever he is he is going in the opposite direction from what he thinks he is," retorted the dealer. "He thinks he's building business for himself when, as a matter of fact, he is doing his ut-

most to tear down the whole darned tractor industry. There needs to be a lot of sense injected into this tractor business—and the truck business too—if the progress that is possible is going to pan out.

"One of the things needed is a real idea of what salesmanship is. We must make some of these tractor boys understand that knocking isn't salesmanship. Knocking hurts the whole tractor business and doesn't make sales for anybody. It puts the farmer into a negative instead of a positive frame of mind and doesn't hasten his speed at all in buying a tractor of any make.

"Here's this lad gets up and tells all those farmers that no tractor is any good unless it has two cylinders and no more. And then the four-cylinder boys—most of whom are old automobile men—get up and tell of the merits of their tractors, but because they have some sense they don't say anything about the two-cylinder man.

## Does He Know What He Is Talking About?

"Therefore, the farmers may think there is something wrong with the four-cylinder machines, and yet they know they have monkeyed with four cylinders in their automobiles for years and haven't had any particular trouble. They think the salesman—or would-be salesman—ought to know what he's talking about, but they have their doubts.

"They certainly know they wouldn't bother with a two-cylinder motor car, and yet one of the oldest tractor firms in the business sends its man here to tell them no four-cylinder motor is any good. What each tractor salesman ought to say is, in substance: 'My machine is good and all the rest are good. Any of them will probably do your farm work for you because they have all been tried on hundreds of farms. But there are certain advantages in construction and here is why I believe you will find MY tractor satisfactory.'

"If the salesman says something like that it doesn't leave any doubt in the farmer's mind as to the practicability of the tractor generally. It sells him on the tractor idea, and all that is left for him to do is select the particular tractor he is to buy.

"There was a time when folks had to

be sold on the idea of owning a car. Now everyone wants a car and the only problem is what make to buy. To-day not every farmer wants a tractor, and one of the jobs of the salesman is to sell him on the idea of owning a tractor. Thereafter he must also be sold on the particular make. But anything that tends to unsell him on the idea that the tractor generally is a good thing is only setting the whole industry back and slowing up business for everybody.

"We must all stand together and boost the tractor business. We must boost it in our advertising, and at our demonstrations. Our idea in presenting a demonstration to the farmer is to convince him that the tractor is a useful thing on his farm and to advertise our different makes, and what a fool thing it is to put on the demonstration and then tell him that tractor design isn't at all standardized, that some tractors are no good, that he will regret it unless he buys some particular tractor and that he had better buy a tractor with his eyes wide open.

"That's a fine description of our business, isn't it? Doesn't it look foolish to advertise ourselves to the world as fakers, out to trim the farmer?"

"I'll say so," said Tommy.

"And we have had a tinge of the same thing in the truck business. Some of our salesmen have knocked, knocked, knocked, until it's a wonder there is any truck business left. If it wasn't for the fact that some men used trucks and will buy them in spite of the salesmen there wouldn't be as many truck salesmen running as there are to-day.

## Determines to Educate Salesmen

"I'm going to get the tractor and truck dealers in Callawassa together and have a heart-to-heart talk some night around the log fire up at the club rooms. Some of these tractor boys haven't had the experience of the old motor car business, and they don't know all they ought to about selling gasoline machinery."

Just then Eddie June, Reilly's truck man, approached.

"Eddie," said Reilly, "is that two-lunger any good?"

"Sure!" said Eddie. "Look at her go!" And he pointed to the field where the knocker and his two-lunger were tearing up the sod.

# Topp-Stewart Four-Wheel-Drive Tractor

*Principle of Four-Wheel Drive Permits of Light Weight—Tractor Designed for Road Haulage and Road Grading as Well as for Farm Work—Engine a Four-Cylinder Waukesha*

THE war has brought the four-wheel drive principle to the fore in motor trucks, and Clintonville, Wis., is one of the centers, if not the center, of four-wheel drive activity. Having proven successful in motor truck work, and even essential in the work of the Ordnance Department, it is little wonder that the principle has been applied also in tractor construction. The advantage of the four-wheel drive is that all of the weight of the tractor, as well as that of the driver, is available for traction purposes. The weight of the tractor being equally divided between the four wheels, the tractor will not pack the soil as hard as would one having the bulk of the weight on its two drives. Simpler and less wasteful traction devices can evidently be used than where only about two-thirds of the weight is available for traction.

Traction is secured by means of loose sliding lugs that grip the ground and automatically clean themselves and the wheel. These are put on without the use of bolts, screws or nuts.

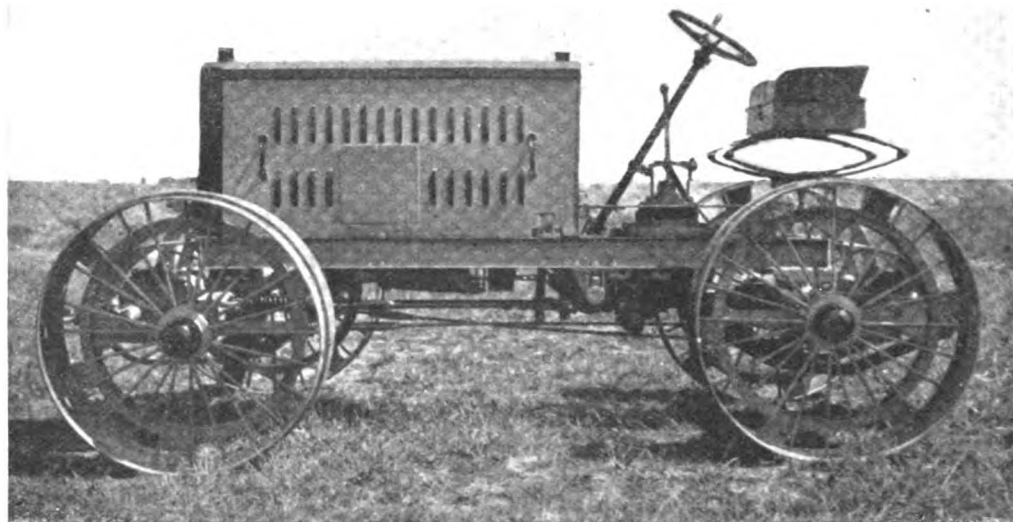
## Designed for Road Grading

The engine of the Topp-Stewart is a Waukesha of 4½ in. bore and 6¾ in. stroke, rated at 45 hp. It has a Kingston carbureter, an Eisemann magneto and a Perflex radiator. The change gear affords three forward speeds, viz., 1½, 2¾ and 5 m.p.h. It appears that the tractor is intended for road work as well as for farm work, as mention is made of an instance where it pulled a heavy load up a steep grade when fitted with solid block tires. Road grading is one of the lines of work for which it is specially designed. The change gear is of the sliding pinion type and operates in oil.

The four-wheel drive naturally complicates the construction, but it is said to be applied here in the simplest possible form. Steering and control are arranged more nearly like on an automobile than on most other tractors.

## Four-Wheel Steer

Ordinarily the Topp-Stewart steers on all four wheels, but it can be quickly changed to steer on two wheels only. A brake is provided acting on the main shaft and therefore retards all four road wheels. A belt pulley is furnished only on tractors intended for farm work. The pulley is 14 in. in diameter by 8 in.



*Side view of Topp-Stewart tractor with four-wheel drive*

width of face and is controlled by a friction clutch. A special design of drawbar is provided which acts as a cushion spring both in starting and stopping. The belt pulley is located directly over the rear axle, between the frame and the rear wheel, on the right-hand side of the driver. This is said to make it easy to line the tractor up with the machine to be operated and to tighten the belt.

The Topp-Stewart tractor weighs 6500 lb. and develops a drawbar pull of 4500 lb. on low gear, 4200 lb. on intermediate and 2000 lb. on high gear. Power steer, a power winch and a canopy are extra equipment that can be furnished.

## New Type Headlight Lens

NEWARK, N. J., Sept. 6—Edward S. Schmidt and J. H. Knox, 238 Central Avenue, trading as the S. & K. Specialty Co., have purchased the manufacturing and selling rights for the International lens, which is an anti-glare device for headlamps. It consists of a galvanized iron wire mesh covered with a semi-transparent coating which is non-breakable, waterproof and fireproof. The lenses are fitted inside the ordinary plain glass and sell for 75 cents a pair in any size. The factory is located at Irvington, N. J.

## Springfield Sees Tractors Work

SPRINGFIELD, ILL., Sept. 6—Ten tractors participated in a plowing demonstration upon the W. E. Ford farm, five miles northeast of Springfield. Thirty acres were plowed, while a large gallery

of spectators witnessed the work. The field of H. O. King in the same vicinity, was also plowed, the machines pulling two or three bottom plows. It is planned to give similar demonstrations in the Sangamon county territory during the remainder of the season, dealers finding that the greater the number of test runs of this kind, the larger the list of sales.

## Battery Stations Aid War Stamp Sales

LANSGING, Sept. 6—Battery service stations are the latest agencies for increasing the sales of thrift stamps in this city. Testing and watering batteries are done without any money going to the owners who are required to purchase at least one 25 cent stamp.

## Amazon Buys O'Neill

AKRON, Sept. 6—The Amazon Rubber Co. has purchased the tire accessory business of the O'Neill Tire & Rubber Co. The purchase includes the exclusive right to the name O'Neill. The O'Neill business will be added to the Amazon business and continued.

## Columbus Window Displays Out

COLUMBUS, OHIO, Sept. 6—The Columbus Varnish Co. is distributing fall window display advertising matter. This is sent free to dealers and garagemen handling Columbus products, and consists of two cut-outs, 14 x 41 in.; four streamers, 6 x 42 in.; two side circular streamers, 10 x 60 in.; one center design, 26 x 42 in.; one sign Peerless color finishings and one wheel showing colors.

## VINCENNES HAS Ideal Soil for Tractor Tests

*Abounds in Good and Poor Land, Level Ground, Rolling Steep Grades and Gentle Inclines—Machines of Radically Different Types, Suited for All Purposes, on Sale by Three Big Agents*

(By Special Motor World Correspondent)

VINCENNES, IND., Sept. 6.—The tractor situation at Vincennes, Ind., presents an interesting aspect. Not only will the relative qualities of dealers of the old and the new schools be determined there but the relative merits of distinct types of tractors in meeting the peculiar farming conditions of that locality will be tried out as well.

Soil conditions there are peculiar. One farmer says he has a dozen different varieties within the confines of a single field; nor is this an exaggeration; it is a veritable fact. In the immediate vicinity of Vincennes there are uplands and lowlands, overflow lands and drained swamp lands, sand on the ridges and the toughest of sticky gumbo in the bottoms. There is good soil and poor, level land and rolling, steep grades and gentle inclines—in short, about all the different kinds of soil and topography may be found in that section, and transitions from one to another are abrupt and unexpected. Probably few areas of equal extent present such a diversity of condition or are any more difficult for tractor cultivation.

In dry weather some of the gumbo soil packs and bakes as hard as any of the Western soils. It then presents an excessively high resistance to the passage of a plow bottom. In wet weather the surface of this soil gets slimy and slippery and it is exceedingly difficult for a tractor to get traction. Always the sand is there, loose, deep and sliding, and especially on the grades and ridges, which nearly all are sandy, it presents traction difficulties which are all but insurmountable. *It is evident that no more fitting place could be selected in which to try out tractors of radically differing types. And they all are there—caterpillar, twin-cylinder, wheel, and four-cylinder wheel, large and small.*

### Tractor Situation in Vincennes

1—Possesses variety of soil admirably suited for an exhaustive test of every type of tractor.

2—Has three distinct types of dealers, each of whom went into the business with entirely different ideals.

3—Dealers carry three distinct types of tractors, no two of which have anything in common except the soil conditions they must face.

4—There are large farmers, working hundreds of acres, all of them anxious to employ the best means to make their farms pay.

*Also the dealers are of distinct types.* At present the tractor business at Vincennes is divided among the Emison Hardware Co. and old farm implement firms handling tractors of the International type; Thomas G. Rankin, motor car dealer, who distributes the Cleveland, a crawler type and the latest acquisition to the ranks; the A. L. Maxwell Co., Ford dealer, which just has entered the field with the Fordson tractor. Some other tractors of the wheel type are represented, but those mentioned seem destined to divide the bulk of Vincennes' tractor trade among them.

### Renders Personal Service

Of these the Emison Hardware Co. has been the longest in the business, and probably at the present time has the largest number of tractors in the field. The service rendered by this firm is typical of that rendered by the average retail implement concern, namely, personal in its nature. There is no service equipment in the way of a repair shop or service wagon. The service man goes out on occasion, and where the difficulty is too serious for him the manufacturer is appealed to. The impression one gets

is that the firm went into the tractor business at the time when it looked to be a good thing to do, but since then there has been no progression nor any work in trade or service development.

Thomas G. Rankin, Maxwell distributor at Vincennes, decided to take on a tractor some six or seven months ago, and, after looking over the situation and making a study of the peculiar farming conditions a tractor would have to meet in that vicinity, decided that the caterpillar type was the most likely to produce satisfaction—so he selected the Cleveland. He is going about the business of selling tractors in a logical, scientific way, with a reason for everything he does and with a constructive program for the future development of his business.

Because the A. L. Maxwell Co. was selected as one of the distributors for the Illinois allotment of Fordson tractors is perhaps the reason why the Vincennes branch of the company, one of five maintained, is at present a factor of importance in the tractor situation at Vincennes. This company went into the business enthusiastically but without previous thought or preparation. No consideration was given the question as to whether the Fordson would meet local conditions; it just was assumed that it would. Being Ford dealers the Fordson tractor was taken on just as a matter of course.

This, then, is the situation:

Three dealers, no two of whom went into the tractor business animated by the same motive or with the same ideals.

Three types of tractors, no two of which have anything in common but the conditions they must face.

Diverse farming conditions within a comparatively small area, some of them the most difficult a tractor has to meet anywhere.

Lastly, there are large farmers, working hundreds of acres, all of them anxious to employ the best means for making their farms pay and more or less committed to the conviction that the tractor is the approved means to that end.

*A more interesting situation hardly could be imagined, nor one better worth while watching its development.*

The fundamental theory upon which Rankin is operating is that the tractor



must fit the soil conditions of the farm upon which it is to work. The peculiarities of soil in the vicinity of Vincennes already have been alluded to. Rankin, who is himself a land owner, knew of these conditions, and he knew likewise that some of the tractors which had been tried out had not proven to be entirely satisfactory.

"I carefully considered these facts when I decided to go into the tractor business," said he, "and I decided that the factor which would determine tractor efficiency would be its ability to negotiate successfully the varying soil conditions of this section."

There can be no question about the correctness of the theory upon which he started. The dealer should fit the tractor to the soil conditions. This is a scientific and a logical way to go about the selling of tractors, and the dealer who adheres to it consistently never can go very far wrong.

"In that portion of my territory which I work myself," continued Rankin, "I employ an expert tractor salesman who looks up the prospects. Once one is discovered I make a conditional contract with him. I agree to bring my tractor out to his farm and to plow where he tells me to and to do it to his satisfaction. If I do he is to buy. I find this method of demonstrating on the farm an efficacious and satisfactory way to make tractor sales.

#### Stays Until Machine Works Properly

"When a tractor is delivered my man goes with it. He stays until it is working satisfactorily under the care of the man who has bought it. He gives him at the time such instruction as he can in person and leaves such printed matter with him as is necessary for an understanding of the machine.

"Within two to four days my man, this time accompanied by a mechanic, makes a second visit. Anything necessary in the way of readjustment the mechanic makes and explains. If the farmer has had any difficulty in the mean time he is questioned about it and the matter made clear to him. He is instructed, too, that in case of more than ordinary difficulty he is at once to call the office and assistance will be sent.

"In this connection I am fitting up a service truck with all the appliances necessary for field service, and this will be used to meet emergency calls. This truck also will be capable of taking a tractor out or of bringing one in for garage attention. I shall keep a trained tractor mechanic to go with the truck. I intend to keep every tractor in my territory working efficiently all the time.

"I impress upon the mind of the buyer that he must not expect to get good service and long life out of a tractor unless he gives it the proper care and attention. I tell him it must be carefully looked after at all times. I particularly try to impress upon him the necessity for a complete overhauling of his tractor at the end of the season before it is housed for the winter. I am inclined to believe that if this annual overhauling should cost the farmer as much as \$150, he well

can afford to incur the expense, as it will pay for itself in lengthening the life of his tractor.

"Next spring I intend to rent 100 acres of land near town, and shall use it as a demonstration farm. I shall motorize it as nearly as possible, and shall try to show on it just what it is possible for a farmer to accomplish with a tractor.

"Let me tell you what some of these tractors have done. On the farm of Tom R. Bannos a tractor went around the wheat field three times while horses were going around twice, and in order that the horses should keep up this pace they were changed every two hours.

"On the Kiser farm two wagons would be hitched side by side with a hay loader behind. When four wagons were loaded in this way the tractor hauled all four at one time to the stacker and then furnished the hoisting power for the stacker. With a 13-year-old boy as operator and with two men, as much work was done in 9 hours in the hay field as 15 men could have done in the same time with four teams.

#### Motor Car Dealers Only

"You know, I control 12 counties. When I first went into the business I thought the ideal dealer would be the implement man. I have changed my mind. Now I am going to cancel every contract I have with implement dealers and make new ones with car dealers.

"Implement men sell tractors just like they do any other merchandise; once it is sold their interest ceases. They have no idea of what adequate service consists of and they won't equip themselves for it. Why, if I should suggest to one of my implement agents that he fit up a service truck such as I am fitting up he would faint away. No, I'm off the implement dealer as a tractor salesman. *Give me the motor car dealer every time.*"

In this connection it might be added that the implement man who sells automobiles also is generally an automobile dealer in methods and service.

Rankin conceives it to be a part of service to maintain a large stock of tractor repair parts which shall be instantly available. His present stock, even for the limited number of tractors he has out, runs into the hundreds of dollars. He says, however, there is wide room for revision in the prices charged for some of the parts.

#### Thirteen-Year-Old Drives Tractor

On a trip into the country Rankin and the Motor World man found Mike Kiser out in the hayfield with his tractor. He had got it into a rather difficult position. As a matter of fact, Mrs. Kiser can drive the tractor better than her husband, while their 13-year-old boy is a better operator than either.

But Mike is an enthusiast. He says he can do almost anything with his machine, and that he can make hay all day on about 5 gal. of gas. He estimates that he uses about 2 gal. per acre for plowing. He says he cut his wheat at the rate of 20 acres a day on about 5 or 6 gal.

The A. L. Maxwell Co., M. D. Gould, manager, Fordson dealer, frankly admits that not much yet has been learned by the company about the possibilities of the tractor trade. But then—Henry Ford is behind the Fordson, which gives the dealer great confidence. Two carloads have been distributed to date, 14 machines, all the Vincennes branch could get at this time.

J. N. Dyer, with his 500 acre farm, is a typical user. Dyer is a business man and a scientific farmer. He operates his big farm for profit, and he won't fool long with anything which does not contribute to that end. But let him talk:

"The small tractor is the salvation of the farmer," says he. "What the farmer wants is speed and power, and these he gets in the small power unit. On farms like mine, and I farm over 500 acres, several of these units will be used. I intend to buy two more, and the three will do practically all of my work except the cultivation of corn. I used to need 12 teams. I have the one tractor and 6 teams now. I must keep at least 4 teams for cultivating corn in spite of the number of tractors I have, but I'll keep them all busy.

"Twice I went to the tractor demonstrations at Winnipeg to see what I might learn. With the first tractor I used the cylinders and gears soon cut out because of dirt. These troubles now are being eliminated by the use of air washers and enclosed gears. Some of the machines I had would not stand the gaff on my farm and went to pieces on me. Others could not make the grades nor get traction in the sand.

#### Cuts 22 Acres on 10 Gal.

"I am using it now in cutting my small grain. It cut 22 acres of wheat in a day on 10 gal. of kerosene. I am going to open up my oats to-day. But it is a little too speedy for the binder. It soon will shake one to pieces. *Binders must be made stronger for use behind a tractor.*

"You can say for me that I am committed to the small power unit, and especially one which is so constructed that every man about the farm who has not been inoculated for tinkering and who has a monkey wrench cannot get into."

J. F. Boyd farms about 400 acres. He also is president of the Second National Bank of Vincennes.

"Every minute I can spare away from the bank I spend running that little tractor of mine," he said. "It's fascinating. I haven't had it long enough to know just what it will do, but as nearly as I can get at it I cut my wheat on about  $\frac{3}{4}$  gal. of kerosene per acre. Pretty good, eh? I anticipate that this one tractor will enable me to do away with one three-horse team. I am greatly pleased with it."

What the ultimate outcome may be as to the type of tractor which will become most popular in the vicinity of Vincennes it is impossible to say now. *But that the motor car dealers of Vincennes will demonstrate their fitness for the position of tractor dealers already is assured.*

*A Department of***BETTER MECHANICS***No. 81***Ignition Repairs and Adjustments on the Autocar Truck**

**I**GNITION on the Autocar truck is by means of a high-tension magneto which delivers the current directly to the two cylinders. Two makes and types of magnetos are supplied as regular equipment on the truck, the Eisemann G 4/2 and the Bosch DU 4/2. The mountings, coupling and fastenings are exactly identical in either case and the two makes may be interchanged. The magneto runs at crankshaft speed.

**Bosch Magneto**

The beginning of the armature primary circuit is in metallic contact with the armature core and the end of the armature primary circuit is connected, by means of the interrupter fastening screw, to the insulated contact block supporting the long platinum contact on the magneto interrupter. The interrupter lever, carrying a short platinum contact, is mounted on the interrupter disk which, in turn, is electrically-connected to the armature core. The primary circuit is completed whenever the two platinum interrupter contacts are brought together and interrupted when these contacts are separated. The separation of the contacts is controlled by the action of the interrupter lever as it bears against the steel segment secured to the inner surface of the interrupter housing. On this type of Bosch there is but one interrupter segment.

The high tension current is generated in the secondary circuit only when there is an interruption of the primary circuit, and this occurs just as the contacts separate. The armature secondary circuit is a continuation of the armature primary circuit, the beginning of the secondary being connected to the primary while the end of the secondary is connected to the insulated collector-ring or slip-ring which is mounted on the armature just inside the driving-shaft end plate of the magneto. Fig. 2 shows the electrical circuits.

The slip-ring brush, which is held in contact with the slip-ring by the brush holder at the shaft end of the magneto, receives the high-tension current col-

**By J. HOWARD PILE**

lected by the slip-ring and by means of the connecting bar under the arch of the magnets passes the current to the metal contact in the center of the distributor plate. From the latter point the high-tension current passes to the distributor brush which is held in a brush holder mounted on the distributor gear, and consequently rotates with the gear.

Metal segments are imbedded in the distributor plate and as the distributor

brush rotates it makes contact successively with the segments of the distributor plate. These segments are in turn connected with the terminal studs on the face of the distributor plate and the studs are connected by cables to the spark plugs in the various cylinders.

**Ignition Trouble**

There are only three places where trouble can possibly occur in the ignition system, and these places are plugs, cables and magneto. Trouble is much more likely to be encountered in the first two than in the last. Plug trouble may be either from short circuiting or from improper gapping. Short circuiting is

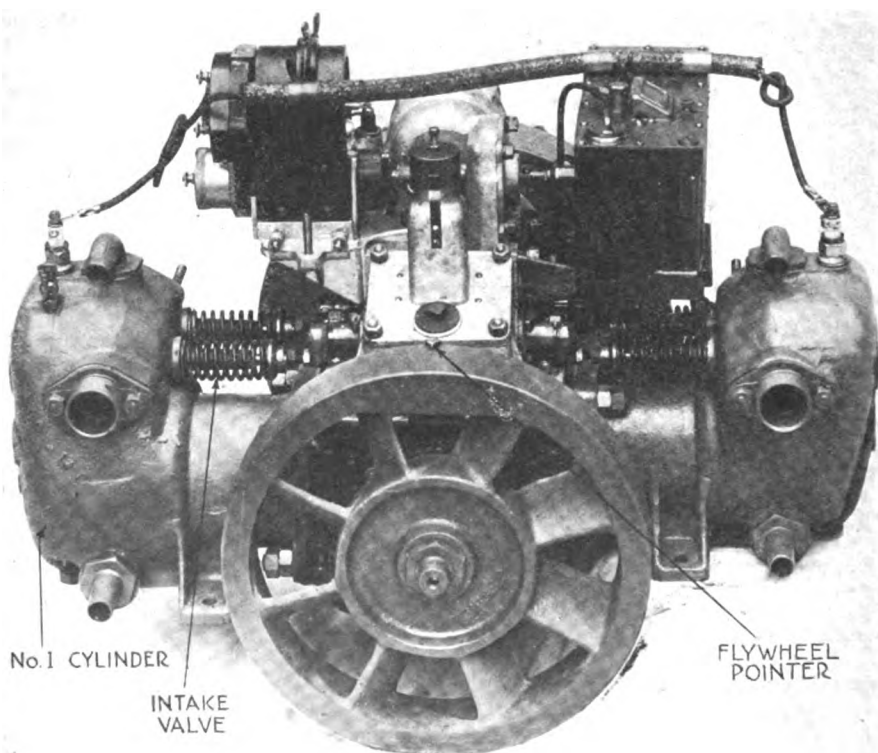
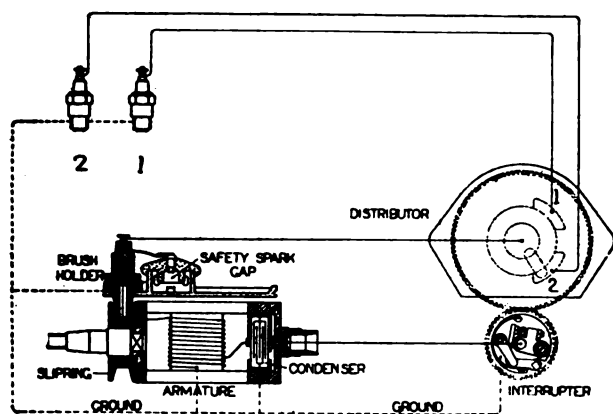
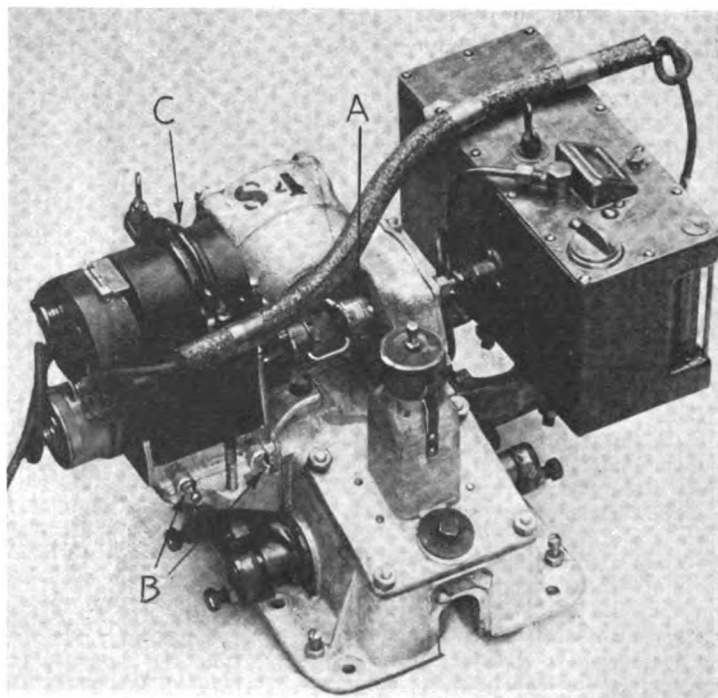


Fig. 1—General view of the engine and the relation of the ignition units. The No. 1 cylinder and its intake valve are indicated



Above, Fig. 2—Primary and secondary circuits of the Bosch DU4/2 magneto used on the Autocar

To the right, Fig. 4—This shows the magneto coupling, the base set screws and the magneto clamp. The high-tension wire to the spark plug on No. 2 cylinder goes through the piece of loom which is clamped over the lubricator. A is the coupling, B the base set screws and C the magneto clamp



caused by a cracked porcelain which is remedied by either a new porcelain or a new plug, and sooting which is remedied by cleaning the soot off. The proper gap between the electrodes of the spark plug is a trifle over 1/50 in. If the gap is not kept down close to this distance the engine will be hard to start and will misfire at low speed.

Misfiring in one cylinder, either continuous or intermittent, may be due to a chafed or broken cable or to a loose cable connection. The metal terminals of the cables must not come in contact with any metal parts of the engine or magneto except the terminals or binding posts that they are supposed to be connected with.

If the ignition fails suddenly the trouble may be due to a short circuit in the low-tension cable due either to—

- 1—A defect in the cable.
- 2—A faulty connection at the switch.
- 3—The presence of dirt or moisture.

A test for trouble in the switch or low-tension cable may be made by removing the cable from the grounding terminal on the cover of the magneto interrupter housing and endeavoring to start the engine. If the engine runs with the wire disconnected, but stops when the wire is connected, it is evident that the magneto is in good working order and that the trouble is due to some fault in the switch or grounding wire, permitting the low-tension current to escape to the ground.

If the cables and plugs are in good condition and yet the ignition is irregular, the trouble is probably with the magneto and the interrupter should be examined.

1—The interrupter lever should move freely on its pivot. If it does not, the hole in the fiber bushing may be slightly enlarged with a reamer or small file. A very small amount of enlarging will produce the desired results. (See Fig. 3.)

The steel spring clip slides sideways to allow the arm to be taken out.

2—The hexagon headed fastening screw in the center of the interrupter must be tight.

3—The platinum contacts must be properly secured and adjusted. This is accomplished by means of the hexagon headed screw which holds one of the contacts and the locknut on the other side of the breaker bar. These are both the same size and can be moved with the Bosch magneto wrench. To make the adjustment the locknut must first be loosened and the head of the screw turned in the desired direction. The thread is right hand so that screwing in will increase the gap and screwing out will decrease the gap. The proper gap is .4 in. (about 1/64 in.) when the interrupter lever is resting on the segment of the interrupter housing. The little strip of steel attached to the Bosch wrench is to be used as a gage for this gap. When the adjustment is correct tighten the locknut. If the contacts are burned or uneven, they should be smoothed up with a fine, flat jeweler's

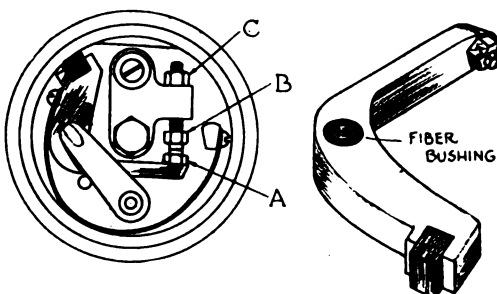


Fig. 3—The hole in the fiber bushing of the interrupter arm may be enlarged a trifle if the interrupter arm sticks. A is the non-adjustable contact. The adjustable contact B is held fixed by the lock nut C which, when loosened, allows the hexagon screw B to be turned in or out

file. All grease and dirt is to be removed from the housing.

The interrupter itself may be taken out as a unit by removing the central hexagon head screw with the Bosch wrench. If it does not come out easily it may be pried out with two small screwdrivers inserted back of the interrupter disk, one on each side. When replacing the interrupter be sure that the key in the disk fits exactly into the keyway on the armature shaft. The adjustment of the contact gap cannot be made when the interrupter is removed from the box.

#### The Eisemann Magneto

While the mechanical details of this make are different from the Bosch, the main principle of current generation and distributing is very similar. The armature has a combined primary and secondary winding which is rotated in the magnetic field, the low tension being induced in the primary winding. When, at the moment of greatest intensity, this current is broken by the opening of the contact breaker, a high-tension spark is developed in the secondary winding. One end of this secondary is connected to the collector ring from which the current is led to the distributing mechanism and finally delivered to the plugs.

The cables are attached to the carbon brushes in the distributor by leading them into the proper holes in the block and then wrapping the bared wire around the screw which is then screwed down. The breaker gap is regulated in much the same way as the Bosch, but the lock nut is on the same side of the arm as the head of the screw instead of being on the opposite side. The wrench furnished for the Eisemann has two gages riveted to the handle. The thinner one is for the purpose of gaging the gap of the contacts in the breaker box and the thicker one is for gaging the gap of the spark plug electrodes.

### Timing the Spark

The spark is timed for both the Bosch and the Eisemann in exactly the same way. To get at the parts the driver's seat should be turned up with the crank.

1—Open the priming cocks on both of the cylinders.

2—Turn the engine in the direction in which it runs till the inlet valve on cylinder No. 1 opens and then closes. No. 1 cylinder is the one to the left as you stand in front of the chassis and look toward the engine. The inlet valve is the one nearest to you or nearest to the front of the truck. (See Fig. 1.)

3—Continue to turn slowly until the CENTER marked on the flywheel is in line with the pointer. This will come up about one-half turn after the inlet valve closes. The appearance of this mark and the one mentioned in operation 4 are shown in Fig. 5.

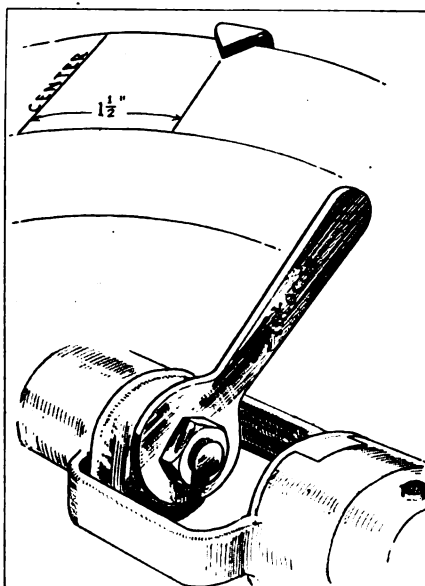
4—Then turn the flywheel back  $1\frac{1}{2}$  in. to a line without any mark. This is the point that the spark is to occur, or very slightly in advance of center. For very light loads, where greater speed is desired, the setting can be 2 in., but in no case must it exceed this or the engine would backfire when starting. It must not be less than  $1\frac{1}{2}$  in. or the spark would be retarded too much and would result in heating the engine and loss of power.

5—Loosen the nut on the magneto coupling with the wrench which is in the kit. (See Figs. 4 and 6.)

6—Loosen yoke studs.

7—Loosen small screws on magneto bracket that holds base of magneto.

8—Place small chisel or screw-driver between magneto coupling and locknut and tap gently to loosen so that armature can be turned. The coupling has a tapered hole and the shaft is tapered correspondingly and there is no key, so that



Above, Fig. 5—The line that is to be brought in front of the pointer to time the magneto is  $1\frac{1}{2}$  in. to the right of the center line. These marks appear on the flywheel exactly as they are reproduced here.

Below, Fig. 6—Wrench which is used to tighten or loosen the nut that holds the coupling in place on the armature shaft

as soon as it is loose the armature will turn independently of the coupling.

9—Remove the breaker box cover and the distributor disk.

10—Turn the armature in the direction in which it runs. This is done by using the magneto wrench on the central hexagon-headed screw in the breaker box. The armature turns clockwise as you face the breaker-box end. Turn until the platinum points just start to sep-

arate or break. This break will start when the end of the breaker arm starts to mount the steel cam on the inside of the breaker box. If the operation cannot be readily seen, a small piece of thin paper caught between the contact points will tell when they begin to separate as it will stay caught as long as the contacts are together, and can be pulled out as soon as they break.

11—Make sure that the distributor brush is on No. 1 contact, which is the one nearest the gasoline tank.

12—Hold firmly in this position with the small magneto wrench, and

13—Tighten the magneto coupling nut with the small wrench which was used to loosen it.

14—Test the setting by turning the flywheel back a few inches and then turning it forward. If the magneto contacts start to break at the line  $1\frac{1}{2}$  in. ahead of center the timing is correct.

15—Replace distributor cover.

16—Replace breaker-box cover.

17—Connect wire cables. The short cable goes from the No. 1 contact of the distributor, which is the one nearest the gasoline tank, to the No. 1 cylinder, which is on the right side of the car as one sits in the driver's seat. The long cable goes across the engine through a piece of loom which is fastened to the magneto clamp and the lubricator and connects No. 2 contact with No. 2 cylinder.

18—Push the magneto back to the coupling, being sure that it is in the center of the magneto bracket.

19—Tighten four set-screws on bracket at magneto base and lock with the lock-nuts.

20—Tighten magneto yoke bolts.

21—Apply ground wire to breaker-box cover.

### War Program for Wrench Makers

NEW YORK, Sept. 6—Manufacturers of drop forged wrenches have adopted a war conservation program for the period of the war. They will discontinue immediately the manufacture of regular finished wrenches in addition to a long list of other wrenches which are considered unnecessary. Semi-finished wrenches may later be eliminated also and their place taken by what is styled a war finish wrench which will be equally as good as the others though slightly different in appearance.

Wrenches will no longer be packed in separate envelopes and all wooden boxes, and sample and display boards for advertising them are eliminated. The lines retained as necessary are: Engineers' wrenches, check nut wrenches, light cap screw wrenches, hexagon box wrenches, square box wrenches, flat handle "S" wrenches, set-screw wrenches, tool post wrenches, single-head socket wrenches, spanner wrenches, construction wrenches, structural wrenches, round handle truck wrenches, car wrenches and light service wrenches, all of which have useful func-

tions to such an extent as to make their elimination doubtful from the viewpoint of conservation.

Those discontinued are all so-called heavy cap screw wrenches, including all millings from those blanks;  $22\frac{1}{2}$  deg. angle or textile wrenches, including all millings from that line of blanks; concave "S" wrenches, machine wrenches, long flat handle wrenches, double-head socket wrenches and all miscellaneous wrenches not mentioned in the above paragraph.

### Smith Form-A-Truck Sees Trouble

CHICAGO, Sept. 5—The affairs of the Smith Motor Truck Corp. were brought to a crisis to-day by the appointment by the United States Court of M. C. McKey receiver in bankruptcy. The receiver immediately took charge of the business and will conduct it under the instructions of the court. For the present production on a reduced scale will be continued, as the receiver has received the sanction of the court to complete existing contracts, both as regards unfilled orders for Smith Form-a-Trucks and for unfinished work the company has been

turning out for the Government. Ten months ago the affairs of the company were taken over by a creditors' committee, with the understanding that the business was to be continued if certain things relative to paying off the indebtedness of the company could be accomplished. Owing to war conditions, the difficulty experienced in getting materials and the increased cost of production, it was impossible to meet the conditions of the creditors and the application for a receiver in bankruptcy followed. It is the purpose of McKey, who is a professional receiver, to take personal charge of the business, retaining the present officers of the company as far as he can to assist him. It is probable that immediately subordinate to the receiver will be R. I. Eads, who for the last six months or so has been vice-president of the company.

### Coast Branch for Bergie

ROCKFORD, ILL., Sept. 6—The Bergie National Spark Plug Co. has opened a Pacific Coast branch office in the Monadnock Building, San Francisco. H. G. Smith has been appointed manager.



The editor of this department is glad to answer questions. In sending queries, always include copies of contracts, notes, etc., to which you refer.

# THE LAW

By George F. Kaiser

As It Applies to  
Dealers  
Repairmen  
Garagemen

## What States Require Locks?

Editor Motor World: I would be pleased to receive any information you desire to afford concerning the ordinances of laws in effect in larger cities as to the necessity of locking automobiles while being parked on the street.—Claude L. Howard, Fidelity Mutual Life Insurance Co., Wilkes-Barre, Pa.

Answer—It is provided in only a comparatively few states that motor cars must be provided with locks so that they cannot be started by persons other than

the owner or driver when they are left unattended on the street. You will see in what states locks are required by glancing at the compilation of state laws printed below.

In addition to the above states a number of other states, among them California, Indiana, Iowa, Kentucky, Maine, Minnesota, Oregon and Texas, provide by law that if cars are left unattended the motor must either be shut off or the brakes must be set.

Division, Bureau of Aircraft Production,  
119 D. Street, N. E., Washington, D. C.

### He's 100 Per Cent on Truck Sales

HARTFORD, Sept. 6—The sales force of Russell P. Faber, Inc., has gone on a 100 per cent truck basis and every salesman is now hustling commercial vehicles. Taber is going after truck business harder than ever, and when asked if he had reduced his force replied that he was increasing it.

### St. Louis Truck Men Organize

ST. LOUIS, Sept. 7—The organization of The Commercial Car and Service Association, including in its membership practically all truck sales and service companies, has been completed. Charles E. Lightfoot, manager of the G. M. C. branch here, was elected chairman. The Association elected to become a bureau of the St. Louis Automobile Manufacturers' and Dealers' Association. The membership fee is \$100 with \$25 annual dues.

**Aircraft Board Needs Men**  
WASHINGTON, Sept. 6—An urgent need for accountants and manufacturing cost clerks who have had either office or factory experience, is made public by the Bureau of Aircraft Production. A limited number of voluntary inductions of men registered under the present draft will be allowed. Induction is open only to men in class 1-A who are classified for

limited service or who are in the remediable group and to men placed in deferred classes on account of dependents. The work will not only be of great service to the Government in the production of airplanes, states the Bureau of Aircraft Production, but it will prove beneficial to the individuals because of the training they will receive. Applicants should communicate with the Personnel Officer, Finance

## State Requirements Regarding Locks and Mirrors

State	Locks	Mirrors	State	Locks	Mirrors
Alabama	No provision	No provision	Nebraska	No provision	No provision
Alaska	No provision	No provision	Nevada	No provision	No provision
Arizona	No provision	No provision	New Hampshire	No provision	No provision
Arkansas	No provision	No provision	New Jersey	No provision	Must have mirror or device to show traffic following if constructed so it cannot be seen.
California	No provision	No provision	New Mexico	No provision	No provision
Colorado	No provision	No provision	New York	No provision	No provision
Connecticut	No provision	Required if vehicle is so constructed that free and unobstructed view to rear cannot be had	North Carolina	No provision	No provision
Delaware	No provision	No provision	North Dakota	No provision	No provision
Dist. of Columbia	Required to lock starting lever.	No provision	Ohio	No provision	No provision
Florida	No provision	No provision	Oklahoma	No provision	No provision
Georgia	No provision	No provision	Oregon	No provision	No provision
Idaho	No provision	No provision	Pennsylvania	No provision	No provision
Illinois	No provision	No provision	Rhode Island	Motor vehicle must be locked with key or made fast so it cannot be started contrary to will of owner.	No provision
Indiana	No provision	No provision	South Carolina	No provision	No provision
Iowa	No provision	No provision	South Dakota	No provision	No provision
Kentucky	No provision	No provision	Tennessee	No provision	No provision
Kansas	No provision	No provision	Texas	No provision	No provision
Louisiana	No provision	No provision	Utah	No provision	No provision
Maine	No provision	No provision	Vermont	Lock and key or device required; must be locked or made fast.	No provision
Maryland	On steam and electric cars, starting lever, etc., must be locked or secured.	No provision	Virginia	If unattended cars must be provided with lock and key or other lock device.	No provision
Massachusetts	Cars must be provided with a lock, ratchet brake or contrivance to prevent vehicle being set in motion.	No provision	Washington	No provision	No provision
Michigan	No provision	No provision	West Virginia	No provision	No provision
Minnesota	No provision	No provision	Wisconsin	No provision	No provision
Mississippi	No provision	No provision	Wyoming	No provision	No provision
Missouri	No provision	No provision			
Montana	No provision	No provision			

# Repairshop Shortcuts

*From Motor World Mechanics*

## No. 1519—RIGGING TOOLS

Rigging tools are forged and machined in various shapes for use in doing heavy truck work where chain falls or block and tackle are used. These falls are not always easy to rig when limited to rope slings and hooks and these devices are useful.—Charles H. Willey, Concord, N. H.

## No. 1520—FUNNEL FOR DIFFICULT PLACES

A long-neck funnel for difficult places is made by soldering a piece of flexible tubing to the end of an ordinary funnel. This tubing may be about 1 ft. long and can be taken from an old speedometer shaft. The tubing can be bent in any direction to get at otherwise inaccessible places.—George S. Mathers, Weyburn Motor Co., Weyburn, Sask., Canada.

## No. 1521—WOODEN FORD REAR-AXLE STAND

A wooden stand for Ford rear axles is made by fastening two pieces of timber together so they cross each other and fastening upright pieces to the ends of these. The tops of these pieces are notched and the axle can be turned over by swinging the propeller shaft up and onto the opposite upright. If castors are fitted to the stand it can be moved about more readily. A shallow tray may also be placed in the center for tools and parts.—Sebastian Frye, Frye's Garage, Ironton, Wis.

## No. 1522—COTTER-PIN PLIERS

A pair of pliers for pulling cotter pins is made by grinding off the noses of an ordinary pair of pliers till they have a sharp point which will enter the eye of the cotter pin. One of the points is inserted in the eye and a good grip is obtained with the handle to pull the pin out.—George S. Mathers, Weyburn Motor Co., Weyburn, Sask., Canada.

## Make a Dollar

*HOW often have you been compelled to rack your brain to overcome some difficulty? But when you did find a solution—what satisfaction it was! Well, here's a chance for you to dig some of those life-savers out of their hiding places and put them to work for your fellow-craftsmen. Send them to Motor World. We will pay you a dollar for every one accepted for publication.*

*The only requirements are these:*

*1—Describe the shortcut briefly but clearly, in few words.*

*2—Send a sketch, in pencil or pen, no matter how rough; our artists will finish the job.*

*3—Write on ONE side of the paper only.*

*4—Sign your name and initials, the name of the company you are with, and the town.*

*Write plainly. If your name is unusual, print it in capital letters.*

## No. 1523—HOLDING A BOLT IN A VISE

A bolt can be held in a vise with a good grip and without damaging the threads by sawing a nut in half lengthwise and putting the halves of the nut between the vise jaws and the bolt. The nut must, of course, be the same size and thread as the bolt which it is intended to grip.—J. R. Flannery, Jr., Forest Garage, Teaneck, N. J.

## No. 1524—REMOVING BALL CHECK FROM DODGE OIL PIPE

The steel ball check and spring of the oil line in the Dodge car are easily removed by using a magnet and a steel wire nail. The nail is touched to the magnet and held there by the magnetism. The nail, clinging to the magnet, is then touched to the ball and spring and it will in turn pick them up and they are lifted right out.—Gilbert Owens, Homer, La.

## No. 1525—A NON-GLARING TROUBLE LIGHT

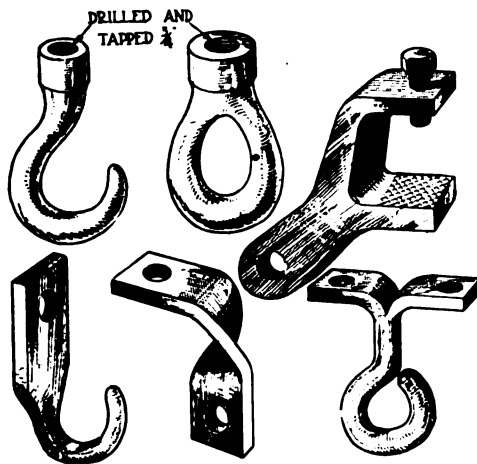
A trouble light or work light that will not glare in the workman's eyes is made from an old Ford lamp reflector. Three strap-iron legs are riveted to the rim of the reflector and a key socket is fitted for the lamp so that it can be turned on and off. A wire screen is placed over the top of the lamp to protect the bulb from injury.—S. P. Cantley, Harrell Auto Co., Prescott, Ark.

## No. 1526—STRAIGHTENING USED COTTER PINS

Cotter pins that have been used once have the legs separated so that it is difficult to enter the pin in the hole and these legs can be brought together by placing a small round pin between the legs and squeezing the legs in a vise or pair of pliers. When the pin is removed the ends of the legs will come together.—Charles H. Willey, Concord, N. H.

## No. 1527—TIRE GAGE HOLDER

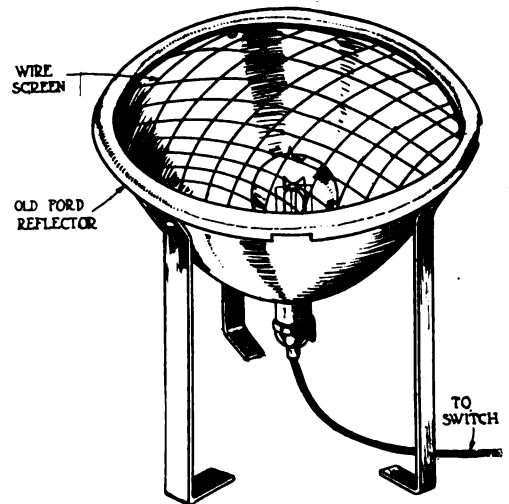
A device to prevent customers from walking off with the tire gage consists of attaching the gage to the end of the air hose with a chain so that it is always handy, yet cannot be removed. One end of the chain, which is about 8 in. long, is soldered to the gage and the other end is caught by the bolt of a hose clamp which is fastened around the air hose.—Clarence J. Steinhoff, Texas Gas & Oil Co., West Hoboken, N. J.



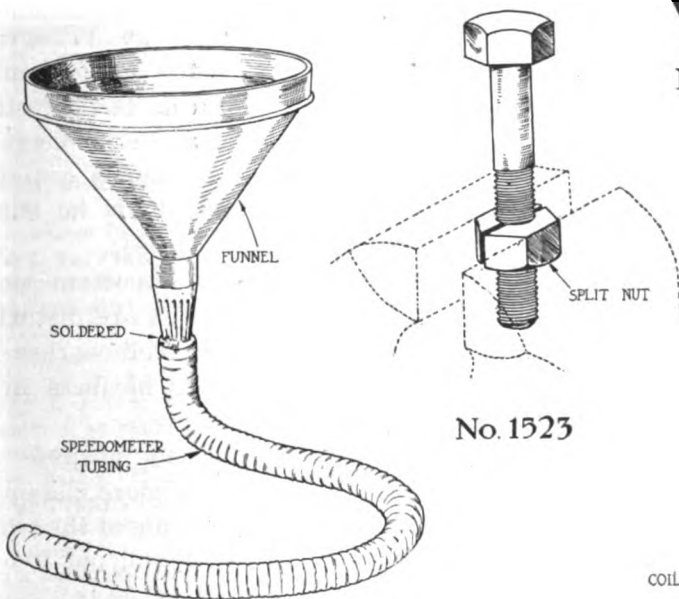
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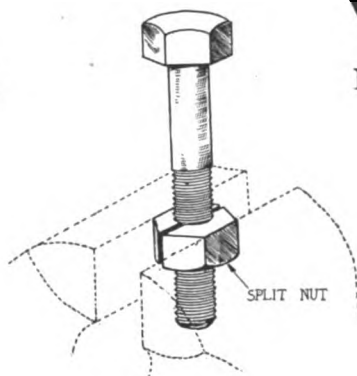
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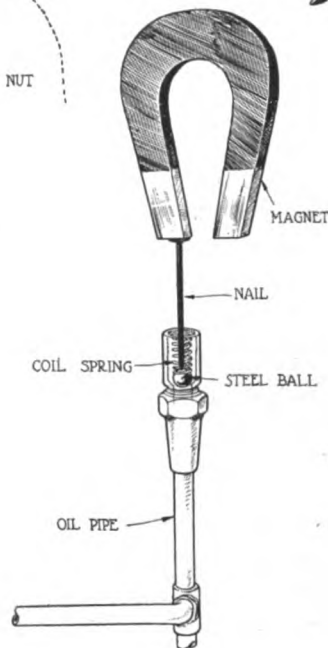
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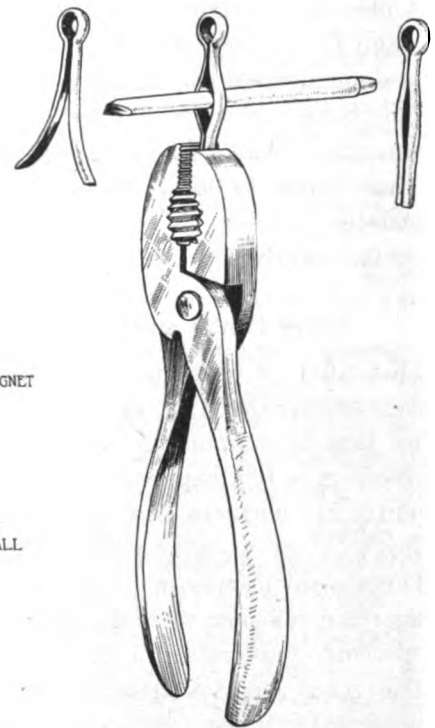
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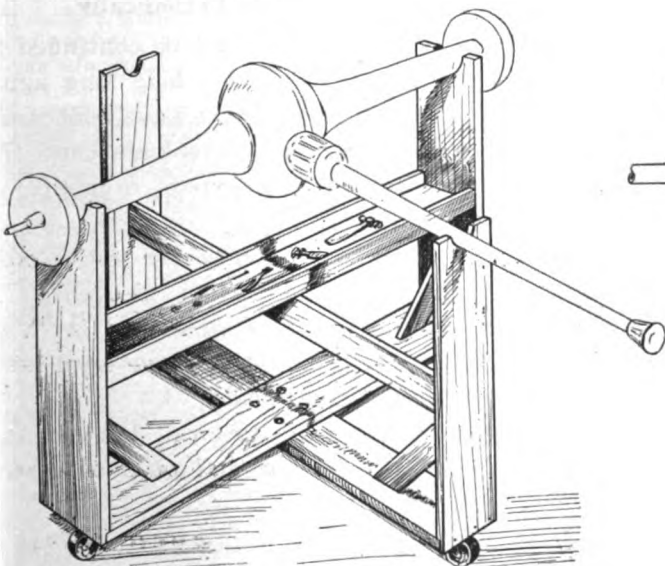
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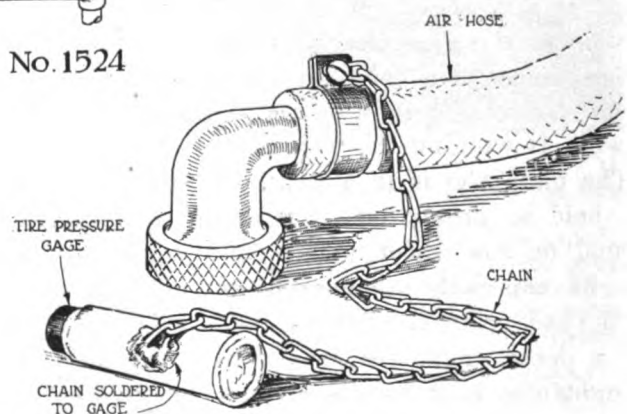
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No. 1526



No. 1521



No. 1527

# Editorial Observation

## The Next Loan—and YOU

**G**ETTING ready for the Fourth Liberty Loan is a job to be started NOW—not when the loan campaign starts.

Dealers and garagemen get ready for winter and summer business in advance of the seasons, and they should do the same thing with this next loan. Last minute work is always less efficient.

A plan for putting the loan over is printed on pages 110 and 111 of MOTOR WORLD this week. Every dealer and garageman should study this plan and USE IT.

The trade, of course, organizes locally for these campaigns. And these meetings will be of wonderful assistance to local organization. They will be especially effective in cases where dealers do not organize locally for the loan.

### Every Dealer an Officer in Civic Army

This plan of win-the-war meetings makes every dealer and garageman an officer in the great civic army that is supporting the fighting army. Every business man is a captain, his assistants are his lieutenants, his workers are the privates who must be drilled in their work and given the right spirit.

These win-the-war meetings which are explained in the plan tell how to make the dealer's and garageman's company or regiment an effective force.

The man who operates a small business with a few employees may feel that HIS company is too small to be worthy of any effort along these lines. That is a mistake. It is the AGGREGATE that counts, as the plan clearly points out.

One dollar is a small factor these days, but the accumulation of dollars that are raised by the loans is what is winning the war.

The man who is in a relatively small circle may not hold so pretentious a meeting—it may not be formal or run under parliamentary rules—it may not be especially announced, or accompanied by music and oratory. But the man who will quietly call a dozen employees around him and informally, thoughtfully, lead discussion into win-the-war channels, *pointing out the importance to the individual of doing his best in support of Liberty Loans and all*

*other war activities, can do a real service in this way. It can be so well done in no other way. And ten thousand such little meetings would produce an enormous aggregate result.*

Whether his opportunity be great or small every American business man should carry out this idea in a definite, systematic manner. The "Program" booklet which is mentioned in the announcement will be found tremendously helpful in its suggestions as to what should be done under any circumstances.

Every employer can be a leader and a center of influence in this work. Not only CAN he but he SHOULD. It is one of his war duties.

And there is one other most important point. These are days when labor conditions are disturbed, when the ties that bind employer and worker are easily and often broken. It leaves business in an unstable condition.

Meetings of organizations for any purpose will bind the workers and the employers more closely together. They will strengthen the morale of the whole. They will make the business better and put it on a more sound basis.

### Should Hold Meetings Periodically

The meetings thus begun should be continued forever. Meetings should have been held long ago by every business organization. Some have done it with great benefit and when the previous loans came these meetings were used for the purpose of supporting the loan.

But now comes an opportunity for the employer who has never held organization meetings. The Fourth Liberty Loan provides an excuse for beginning the meetings, and, once they have been begun, they should be forever continued.

The plan you are asked to adopt will do two things:

1—*Help the Liberty Loan and all other war activities.*

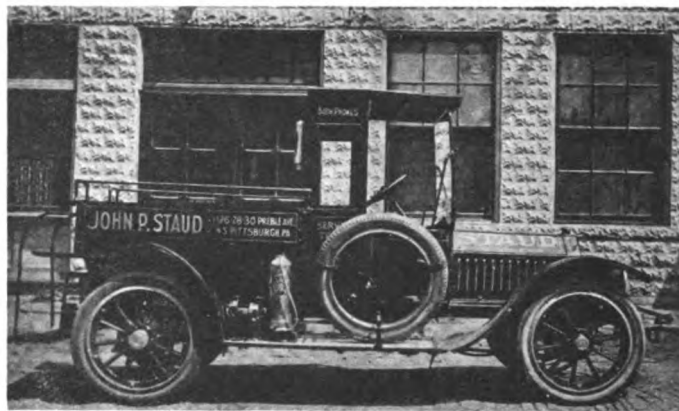
2—*Make the worker a better worker in both his war duties and his daily work.*

*Can the leaders in America's business army fail to lead in this time when leadership is needed?*



## Letters from Readers

**THIS** page is for the use of MOTOR WORLD readers with something to say. Letters on subjects of interest to dealers, garagemen, repairmen and jobbers are always welcome.—EDITOR.



*This is the service truck that Staud built after the plans prepared by Motor World and published some time ago*

### Give 'Em a Lift

The following letter has been sent to all the members of the Montreal Automobile Association:

**TO MEMBERS OF THE MONTREAL AUTOMOBILE ASSOCIATION AND OTHER PUBLIC-SPIRITED AND PATRIOTIC MOTORISTS:**

During the continuance of the war thousands of soldiers and sailors, who are giving their services to the country, will be in the city of Montreal, either on business or furlough. They may be found every day traveling to or from their destinations, on foot, or in uncomfortable and congested street cars.

Thousands of automobiles are being driven on Montreal streets to-day with only one or two passengers. It has been suggested that the local motorist can render a splendid service to the boys in blue and khaki by kindly volunteering to give them a lift and carrying them as far as they may wish to go in the direction in which the motorist is traveling.

Soldiers and sailors have plenty of walking to do and a nickel saved in a car fare might mean some little comfort that they might not otherwise have. Automobile clubs in all other cities in the country are doing a similar work, and it is up to us to get into line.

Don't forget that the boys in blue and

khaki are going over to fight the Hun while we are permitted to remain here and enjoy the use of our automobiles, for pleasure and business. **GIVE 'EM A LIFT.**

Trusting that we may have your wholehearted co-operation in this, we are, Montreal Automobile Association, (Signed) T. C. Kirby, Secretary.

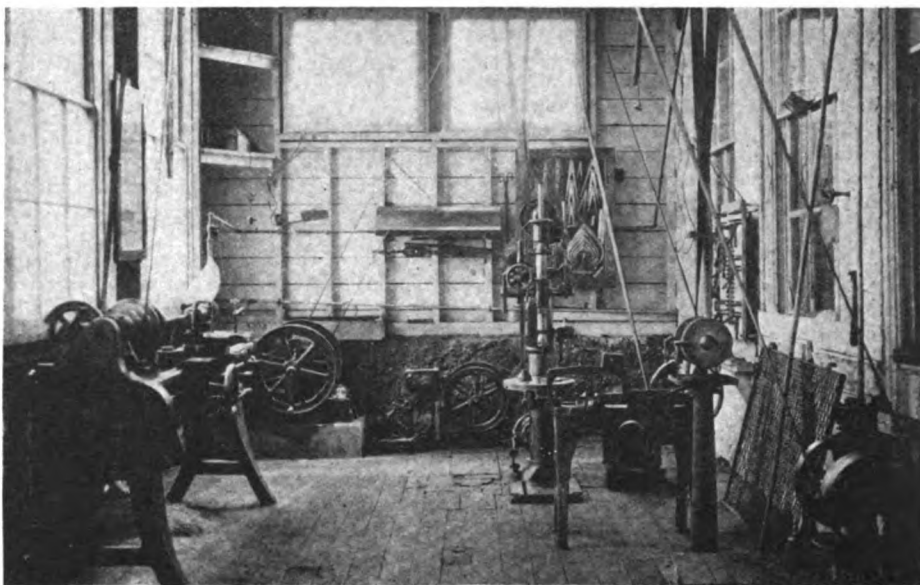
### Motor World Service Truck

Editor Motor World: Am enclosing a few pictures of our service truck and a picture of our forging department and machine shop.

Our service truck is a 1908 Peerless car; it has gone over 135,000 miles and

has never had a wrench put on her engine; everything is the same equipment that was on the car when it came from the factory in 1908 except the carbureter, which is a Sunderman Model F, which gives us a mileage of 12 to 13 to the gallon here in Pittsburgh, and it will give us up to 50 miles per hour if necessary. We followed your instructions as near as we could for the making of this service truck as published some time ago in Motor World, and at the present time we have the most complete service truck in the city of Pittsburgh.

In our machine shop we have a South Bend lathe, 16-in. swing, 8-ft. bed, a Candey-Otto 20-in. drill press, a QMS power hack saw, a Norton grinder, a Auto No. 0 air compressor and a full set

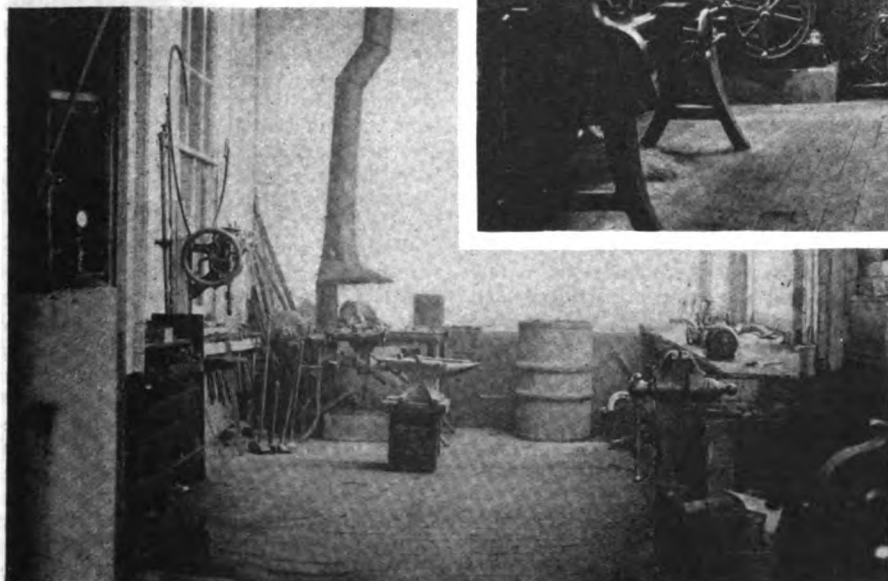


*The forge room and machine shop to which Staud refers in his letter*

of Union Caliper Co.'s machinist's tools, a Witte gasoline engine for power and an Economy engine for electricity. Our garage is 40 x 60 and two stories with elevator.—John P. Staud, Pittsburgh.

### Battery Ignition Directory

A folder containing complete and authentic data covering all standard battery ignition systems has been compiled by the Jefferson Electric Mfg. Co., 431



South Green Street, Chicago. All makes of cars are listed from 1912 to the present date, and the year, model, type of ignition and style of Jefferson coil

used for replacement is given. Folders will be sent free to dealers, garages, service stations or jobbers requesting a copy.

can find suitable quarters in the heart of Motor Row.

I want to tell you a little experience I had a few weeks ago. I have a good record here as a mechanic for honesty, clean work and good work, with seven years' experience to back it up with. I am a Hudson and Packard specialist. I left the Packard company at Seattle where I was working and came over to Tacoma. I heard that the Elgin Sales Company here wanted a foreman so I applied for the job and went to work. My experience is exactly as C. R. Pierson's. I found that they could not keep mechanics at all, and I could not understand why. But I found out soon enough when I came in the office and called for the manager, E. R. Smith. He was phoning to someone and telling them that if he did not get a good mechanic soon here he would go to Seattle for one.

#### Given Charge of Shop

I had a talk with him after he was through talking and he hired me, but would not pay me what I was worth. Well, finally, after I started to leave, he called me back and said he would pay me what I wanted and I would have charge of the shop, hiring and firing, service and the entire shop responsibility would rest on me, and that neither he nor his partner would have anything to do with the shop. So I went to work. When I walked into the shop there were two wrecks all torn down, a lot of old parts all over the floor with ½ in. of grease on the floor, and in the corner a pile of rubbish higher than my head.

I hired my brother, who is a good mechanic, and a helper, and we got right busy to clean things up. After we worked all morning and cleaned up the shop we started to look for tools, and all they had was a broken hub wrench, a few Ford tools and a couple of broken jacks. Fortunately we each of us carried 400 lb. of tools worth about \$350 apiece, so we got busy and started in to clean up what we had in the shop.

#### How's This for Trouble?

We had three rear ends to replace for a starter, and in the meantime a customer came in who had bought two new cars in as many months. One of the wrecks was his. He told us it was in the shop for two months and nothing had been done to it. A street car hit it and bent the chassis. It was all disassembled, so when he found out we were going to work here he was tickled to death that we were going to get his machine fixed up.

Well, to cut a long story short, we worked one month and the shop did not earn a cent. It cost them about \$500 that month for free labor and service. You see their job orders were made out in the office by the girl bookkeeper and the customer brought them in. If a customer came in and told them he needed a new motor he would pretty near come getting it. I saw the mistake of having the orders made out in the office and not by men and told the manager about it. As I was new here I could not change it without their consent. He said for me

## Tacoma Mechanics Are Unionized

*As a Result an Employer Can Always Be Sure  
His Men Will Deliver the Goods*

Editor Motor World: Being a reader of Motor World for the past two years, and enjoying the feeling that Motor World has helped me in my trade as an automobile mechanic to be a better mechanic, I take this means in letting you know that I appreciate the helpfulness of the entire contents and have a good word to all my fellow-mechanics for your book.

I claim I owe my rapid advance in the game since I have been reading your book to such articles as Better Mechanics, Repairshop Shortcuts and the different editorials. I take *Motor Age*, *Motor Life* and did take *Horseless Age*, and a few more non-technical magazines. However, I prefer your Motor World to them all. If the price of Motor World went to \$1 I would not be without it, as I feel I would not be up to date on the game. Lots of my friends ask me where I get all the "dope" to do hard things easy. I tell them to read Motor World and some of the other magazines, and they say it must take some money to buy all those books, and I tell them I don't figure it that way because I get more out of them than they cost. So after I have the above off my chest and can breathe easier, I want to tell you some more about this locality of which I read very little about in Motor World.

#### Best City on Coast

This place is called Tacoma, Wash. No doubt you have heard about it, as it is getting to be the best city on the Pacific Coast for the automotive game, selling and repairing. We have an 'automobile mechanics' union here and are affiliated with the International Association of Machinists. We are young, but growing every day. We are 90 per cent organized here, and as you know what a union is for, we go it one better and make our men understand that we are not only union men but better mechanics. And how do we do it? Why, by simply classifying our men. Every man who belongs to our organization must take an examination—that is, mechanics, not helpers, or apprentices. We have six men on the examining board who alternate and three sit at a time every Monday night and examine all new applicants. They give a journeyman's examination and if an applicant doesn't pass it he gets what is called a mechanic's rating. The examination calls for answers to the following line of subjects:

The grade of journeyman shall be

given to any member who can perform in a workmanlike manner all the following tasks: Overhauling, repairing, replacing or assembling of all parts or five of the six groups into which the automobile is divided: namely—1, motor; 2, transmission; 3, rear assembly; 4, front-end assembly; 5, steering-gear assembly; 6, electric ignition and starting. This examination takes about 1½ hours to answer orally, and I have seen as many as 20 men take this examination and only three get by. I know that I was wiser when I came out than when I went in, and the rest of the members say the same.

#### Mechanics' Examining Board

The reason we have an examining board is to make better mechanics and to give the motoring public a square deal, because when a man goes through this he can handle anything; and the feeling among us is to show the boss that we can deliver the goods for the money we ask and our men don't need to feel that when they go after a job and are good men and the boss asks them if they are good all around men and they tell him yes, they know that they earn every cent they get because they can back it up with a first class card that demands first class wages.

We have the situation so well in hand here in Seattle that the employer will not hire anyone outside of the union labor bureau, because he knows that when he calls for a first-class mechanic who gets 80 cents an hour for his labor he is getting a man who is worth it, and he doesn't have to worry about any work coming back because the man can deliver the goods, and our men don't quit a job, regardless what the grievance is, without giving at least two days' notice. That is why we are better mechanics. We are only a few months old here and have things going nicely. I belonged in Seattle since last year and we have there 500 mechanics and helpers in our lodge, which is known as 289. Bob Sill is our business agent, and we owe it to his work that the lodge is as strong as it is. Seattle is a 100 per cent organized city, and a strong one too, and their method is the same as ours.

They have a large hall where the boys come in noon hours and evenings and talk shop. Motor World and other periodicals are there to read. We are going to have a hall here also as soon as we

to attend to all of this, and when I started it was kept up by the bookkeeper just the same, so I told him that if he wanted to continue to lose money he would have the work orders made out as before. There would be so many items on a work order that came from the office that it would keep us busy checking them up, and after going all over a car we would find about one or two items that needed attention.

All this time lost by us, no money in the drawer, and the time lost by the customer and sometimes money, I was getting pretty tired of this. We got swamped with work like this and this time-keeping system was bad. I told the boss and he said he would change it. I showed him the Packard policy of shop time system. He forgot again and things ran on the same all the first month. When the second month came around I was disgusted. I asked for tools and equipment, and all this time they were hollering because they were losing money on the shop. Finally I got a set of stocks and dies and that's all. I made up my mind that I was going to be boss for the last time, so I did. I had a talk with him and showed him how to eliminate all this free service and make the shop pay.

#### Customers Interfering in Shop

So he finally gave me permission to put it into effect, and I did, and the shop has been paying right along. They put in a few more tools and things were running nicely, and all this while people were hearing they had a good shop with good men, and our work increased. I tried to keep the shop locked, but they would insist on bringing customers in the shop, and then those same people kept coming in the same as if they were invited in. I put a sign on the door to transact their business at the office and to keep out, as it interfered with our work. But they persisted in coming in and I told the boss about it. He said put them out; you are running the shop.

Well, one day a customer came in the shop, and as he had no business to transact I asked him to keep out until we were through with his car, and he went down and told the boss we wouldn't let him in the shop. The boss came up and asked me what the trouble was, and we told him we didn't know what trouble he was talking about, and he said this customer came down and said we put him out. I told him what I said and that I was following his orders. When I wasn't there he would come in the shop, pull a man off a job and put him on another. I would be down in the stockroom or be out testing out a car, and when I came back I would find the men on different jobs, so I spoke to him about it and told him that if he wanted me to stay he would have to stay away from our work, as he was throwing our shop out of order. No, he never stopped. He kept on just the same.

Then I needed a new man, so he finally got me a man who came from Montana. The boss brought him up and said for me to give him a trial, as he was a first-

class, all-around man, and if he did not make good in the next two days to fire him. This was on a Thursday, so I put this expert to work lining brake bands, and when he got through I asked to see them; and so help me Hannah, I could put a 1/4-in. spacer between the band and the lining between each pair of rivets. He even asked my brother how to stitch the lining. Then I put him on a spiral rear end to adjust it, and after he finished I asked to look at it before he closed it up. It was fierce. I stayed three hours' overtime and did it over. He worked for three days and I told the boss after the brake lining job came back that I was going to let the new man go, and he said "All right."

So when Saturday came around I gave him his check and told him it was final, and he asked me why and I told him he could not do that kind of work for me. You ought to have seen his tools. He had a couple of wood chisels, some bicycle wrenches and a lot of carpenter tools. When Monday morning came around this same man was back on the job. I asked him how it came about that he was back, and he said he was around Sunday and the boss told him to go to work. So I went down to the boss and asked him the meaning of this, and he said: "Give him another chance," and I told him to put someone else in my place, as I was leaving if that was the way he intends to run his shop. My brother took my place and this kept up the same way for about a week.

One day this new man lined a set of brakes for one of the salesmen on a demonstrator, and while the salesman was out demonstrating the car the next day after the brake job he was coming down a long hill when all of a sudden away went the lining and jammed his brakes. He came back and told the boss he lost the sale, as the party said the car would not hold on a hill, and so they fired the new man for good. I want to say that this new man did not belong to our organization or this would not have happened. Here is a man who is irresponsible and thinks he knows it all.

I am at present with the Robert K. Heath Auto Co., as the news item will show.

Hoping to see this article in Motor World in condensed form, I beg to remain,  
I. A. CARPENTER,  
Tacoma, Wash.

#### N. I. V. A. Convention

CHICAGO, Sept. 5—The National Implement and Vehicle Association will hold its Silver or twenty-fifth annual convention in Chicago, Oct. 16, 17, 18, with headquarters at the Congress Hotel, where all sessions will be held. It will be distinctly a War Convention from invocation to adjournment, for the war itself and its far-reaching effects industrially are uppermost in the minds of every manufacturer to-day.

These are some of the outstanding topics for the consideration of the big convention: Materials, Labor, Eliminations, Government License of the Industry,

Freight and Passenger Transportation. Men well informed on these matters of concern to the industry will address the meetings, some of the speakers being of national note and whose addresses will be authoritative. Several officials from Washington will be on the program.

#### Ryan Heads Army Aircraft

WASHINGTON, Sept. 5—John D. Ryan, director of the Bureau of Aircraft Investigation, has been appointed Second Assistant Secretary of War in charge not only of aircraft production but also of all military aeronautic activity. Major General William Kenly, head of the Department of Military Aeronautics, will hereafter report to Mr. Ryan. A new head of the Bureau of Aircraft Production will be named shortly by Mr. Ryan. Until the new director is named, W. C. Potter, assistant director of the bureau, will be the acting director, according to a statement made by Mr. Ryan.

#### Rubber Imports Drop Slightly

NEW YORK, Sept. 6—Importations of crude rubber dropped slightly during the month of July as compared with the previous month, though the total for the first six months of the year is well in excess of the total for the first six months of 1917. During July, 1918, a total of 16,092 tons was brought in, as compared with 17,290 tons in July, 1917, the drop amounting to 1198 tons. July, 1918, showed a much greater drop when compared with June, the difference being a loss of 8022 tons.

During the first six months of 1916 the total amount of rubber brought in was 105,371 tons. This compares with 115,560 tons brought in during the first six months of 1918, making this year to date 10,189 tons ahead of last year.

#### N. A. D. A. Gets 200 More

ST. LOUIS, Sept. 6—Last week brought about 200 members to the N. A. D. A. There was during the week no big effort and these members came from here, there and everywhere, mostly one at a time. The largest bunch came from Detroit. This was 12 memberships and they were sent in by Executive Secretary Peake, who reported that he was "passing through Detroit and went out and talked to a few dealers."

The headquarters staff is wondering what has become of some of the territorial committee recently appointed by the N. A. D. A. state committees. Some of these committees make a brisk start but have not been much heard from recently.

#### Ford Has 5000 Service Stars

DETROIT, Sept. 5—There are now 5000 stars in the service flag of the Ford Motor Co. Among those who are represented in the flag are 400 repairmen serving in France as a unit.

# The RETAIL NEWS

## SOUTHWEST

The Capital City Repair Shop Garage, Austin, Tex., was seriously damaged by an explosion.

The Keith Motor Co., Dallas, Tex., is the new name of the company formerly known as the Texas Truck Co.

The Hall Motor Co., Forth Worth, Tex., is in its new location, Second and Throckmorton streets.

W. A. Dowell, McKinney, Tex., is erecting a garage, which it is reported will be leased.

J. H. Stinson & Son, McKinney, Tex., have moved their salesrooms for Hupmobile, Maxwell and Chalmers to North Tennessee Street.

The Sawyer Garage & Storage Battery Co., Livingston, Tex., has bought the Auto Service Co., and moved to the latter's garage.

The Jack Arnold Garage, Silver City, N. M., was recently destroyed by fire.

The Barnard Auto Supply Co., Texarkana, Ark., is moving to new quarters, 217-19 Maple Street.

O. R. Chittenden & Co., Alva, Okla., have opened a painting and top repair business in the old Pike Highway Garage.

The Ford Garage, Claremore, Okla., will occupy two stories of the Main Hotel building, now being remodeled.

Alex Thomas, Comanche, Okla., has bought the Comanche Garage from B. E. Goff.

Clyde Kincaid, Comanche, Okla., has bought the Houston Auto Co. from M. C. Houston.

Lee Frasier, Frederick, Okla., is enlarging his store building to accommodate the stock and equipment of the Frederick Gas Engine Works, recently purchased.

R. J. Hardenbrook, Jefferson, Okla., has bought the garage interests of Ora Mowbray.

The Clarence Auto Co., Clarence, Mo., has opened.

Alex Shaw, Huntsville, Mo., has bought the garage of Ezra Creed.

The Southwest Tire Co., Joplin, Mo., is advertising a "quit business" sale.

The Carleton-Williams Tire Co., Kansas City, Mo., will move soon to 1515 Grand Avenue.

Zachelle Bros., Burlington, Kan., have bought the Star Livery Barn and will remodel it into a garage. They are now in blacksmithing and repair business.

Floyd Combs, Elkhart, Kan., has disposed of his interest in the Elkhart Garage.

Comer & Haviland, Kimball, Kan., have completed their garage, including repair equipment.

Harold Martindale, Madison, Kan., has bought the Wright Motor Co. garage, and will deal in Columbia, Lexington, Liberty and Hupmobile cars, as the Martindale Motor Co.

A. N. Smith, Neodesha, Kan., has bought the Economy Vulcanizing Co. from J. R. Davis.

Elwick Auto Supply, Tire & Vulcanizing Co., Abilene, Kan., will move to new quarters on Third Street.

F. L. Pattock, Cimarron, Kan., formerly of Lakin, has purchased the Standard Oil agency from William Westfall and moved to new quarters.

The Oil City Garage, Eldorado, Kan., B. F. Peters and H. C. Kendall, proprietors, is in its new building, specializing in used cars.

The Brandon-Osburn Tire Co., Eldorado, Kan., is the name of a new firm established by Earl Brandon and Spencer Osburn, 108 West First Avenue.

George W. and J. Hill, Greensburg, Kan., formerly of Lamar, Col., have opened a repair and vulcanizing shop.

The Exer-Morgan Co., Independence, Kan., has opened a service station and salesroom. Charles Adamson is in charge.

J. H. Robinson, Pittsburg, Kan., has opened a battery supply station.

R. O. Livingston, Rexford, Kan., has leased the Rexford Vulcanizing Shop from A. O. Thielier.

C. L. Johnson and associates, Towanda, Kan., have bought the Towanda Garage, Mr. Johnson acting as manager.

The Auto & Supply Co., Whitewater, Kan., has opened salesrooms.

The Nessley-Hurst Auto Co., Wellington, Kan., has bought the Rule Motor Co.'s North Washington Street Garage.

J. S. Rankin, Holden, Mo., whose garage was destroyed by fire recently, will rebuild and resume business at once.

H. C. Kauffman, Joplin, Mo., has bought the Myers Tire Service Co.

The A. B. C. Electric Garage Co., Kansas City, Mo., has succeeded the Russell Electric Garage, No. 2, and will handle battery material, tires and electric trucks.

C. E. Hixson and W. H. Tenny, Brookfield, Mo., will open a tire repairshop. Mr. Hixson conducts a similar business at Macon.

August Perry, Mokane, Mo., has bought a half interest in the Howard Garage.

S. E. Thomason, St. Charles, Mo., has bought the Studebaker Garage.

C. Burrow, West Plains, Mo., has bought the Tom Woods Garage.

The Central Garage, Boswell, Okla., Fry & Bryant, proprietors, will open soon.

The Central Garage, Bristow, Okla., J. W. Overstreet and D. E. Hall, proprietors, is the title of a consolidated company which will operate a new garage recently opened by the firm on West Seventh Street, and the older Central Garage, bought from R. W. Lovett.

Ira Franklin, Chandler, Okla., has bought the automobile and accessory business of Max Lowen.

John Briscoe, Marlowe, Okla., has opened a garage, with equipment formerly owned by John Sherrod.

The Robinson Motor Co., Muskogee, Okla., succeeds the W. T. Cole Motor Co. as Chandler and Stanley dealers.

The Highway Garage, Shawnee, Okla., has been opened. L. E. Spencer & Co. are the proprietors.

The Tulsa Auto Sales Co., Tulsa, Okla., is opening branches in Oklahoma City and Muskogee.

George W. Royce, Wilburton, Okla., of the Royce Motor Co., has bought the Hughes Motor Co., and moved his business to the Hughes Building.

J. Samuel Stone, Kingston, Okla., has bought A. L. Houghton's garage.

P. N. Winstead, Canyon, Tex., has bought the Wilson Garage and moved its equipment and business to the City Garage.

The Overland Automobile Co., Dallas, Tex., is established in its new quarters, Ervay and Cadiz streets.

The Overland-Sherman Co., Sherman, Tex., is located in new quarters, Pecan and Walnut streets.

## New Garages

J. E. Dockler.....Farlington, Kan.  
Craig & Swonger (Overland dealers),  
Garnett, Kan.  
Alex. Scheuler.....Hays, Kan.  
Bruce Saunders.....Holton, Kan.  
W. C. Anderson.....Liberal, Kan.  
Percy Moore.....Manchester, Kan.  
Davison & White.....Quenemo, Kan.  
Chevrolet Motor Co.....Springfield, Mo.  
Dwight Beman (addition).....Blackwell, Okla.  
M. Tooney (addition).....Americus, Kan.  
A. J. Poyner.....Joplin, Mo.  
Water Tower Garage.....Warrenton, Mo.  
Flower Bros.....Marietta, Okla.  
Central Garage (addition).....Purcell, Okla.  
G. P. Burton.....Branch, Ark.  
A. A. Crawford (owner of building),  
Beckville, Tex.  
Dixie Watkins & Walter Cockrell,  
McKinney, Tex.

## NORTHWEST

F. H. Mayhew, Webster, S. D., bought the Frank Wold automobile repairshop interest.

West Concord Garage Co., West Concord, Minn., has been incorporated at \$20,000 by W. G. Stinson, C. D. Simpson, A. E. Pennell and others.

George Ash, Ulen, Minn., closed his garage.

Archie Roth and Charles Stiles, Columbia, Falls, Mont., have bought the Columbia Falls Garage from Lenon & Geeslin.

Herman Weber, Hebron, N. D., bought the George Geng interest in the Red Trail Garage.

Byman Bros., Osakis, Minn., lost their vulcanizing and automobile supplies business by fire.

Teepee Motor Co., Forsyth, Mont., Hetherington & Everett, bought the Sweeney Motor Co. Garage.

St. John Bros. & Pettit, Fairmont, Minn., closed their garage and repairshop.

A. E. Arney, Black Duck, Minn., sold his interest in Motor Inn and moved to International Falls, Minn.

Clarence Geisters, Humboldt, S. D., bought the R. J. Kuhl Garage.

Herman Cordes, Hammond, Minn., bought the Hammond garage from John Schultz.

Ole Stensrud, Louisburg, Minn., bought the J. W. Larson Garage.

Jacob Scheffler, Jordan, Minn., retired from the garage business.

Halvor Belland, Jasper, Minn., bought the repairshop of the A. S. Larson Garage.

Bert Underwood, Sentinel Butte, N. D., will have charge of the Farris Garage bought by Henry Lehman.

J. S. Kent, Evansville, Minn., bought the A. A. Urness interest in Motor Inn.

Robert Haddow, Gilby, N. D., has bought out his partner in Haddow & Sangacon's Garage.

Ben Kalmes, Winona, Minn., bought the Babylon Tire & Repair Co., Winona, Minn.

W. O. Rundie and M. C. Heckaman, Wibaux, Mont., bought the C. H. Fast vulcanizing shop.

G. C. Perkins, Barlowton, Mont., bought the Leslie Robertson Garage.

Peter Schekel, Lake Andes, S. D., sold the Lakeside Auto Co. to Arle Dykstra, Sioux Center, Ia.

L. C. Garner, Flasher, N. D., has taken a half interest in the Kellstrom Garage.

John Neubauer, Tuttle, N. D., sold his garage repairshop to P. O. Sitzger of McClusky, N. D.

Schuldt Bros., Great Bend, N. D., have closed their garage.

Hayes & Forsblade, Minneapolis, garage business, dissolved partnership.



A. R. Buck and John Sorenson, Askov, Minn., have closed their garage.

Charles Roemhildt, Waterville, Minn., bought the Walter Bros. Garage.

Albert Hamachek, R. O. Sigman and R. B. Eyerly, Denton, Mont., bought the L. H. Freeman Garage.

Frank Vreize, Wykoff, Minn., bought Aaron Vreize's interest in Vreize Bros.' Garage.

William Scully, Green Isle, Minn., bought the Zumberge Bros. Garage.

Henry Schmidt, Boyd, Minn., bought the Estling Garage.

John Vihstadt, Rochester, Minn., bought the interest of R. N. Sweet in the Sweet & Vihstadt automobile sales and garage business.

Albert Lea Auto Co., Albert Lea, Minn., has closed its shop. The equipment has been sent to the Rabe Garage at Nicollet, Minn.

W. L. Smull, Clark, S. D., bought the automobile storage and repair business known as Austin Garage.

C. H. Ihlen and Hans Lyhne, Hamberg, N. D., bought the Hamberg Garage.

D. N. and Clarence Crooks, Hartford, S. D., bought the Paul Jones Northside Garage.

Ittel & Pretzel, Mayer, Minn., closed their garage subject to partnership dissolution.

Harold Barr, Sidney, Mont., bought a half interest in the Gem City Motor Co.

Jesse Benton, Binford, N. D., bought the interest of his partner, H. B. Hanson, in their garage business.

Louis Brua, Wildrose, N. D., bought the Wildrose Auto Co. from Theo. Sampson.

C. G. St. John and Sherman Clark, Clear Lake, S. D., sold their interest in the City Auto & Garage Co. to Ted Richardson of Watertown, S. D.

Blain Auto Co., Redfield, S. D., has discontinued business.

J. E. Bergquist, Willmar, Minn., bought the A. C. Skoog interest in Motor Inn.

William Sedam, Rushmore, Minn., bought from E. M. Brines a half interest in the Rushmore Auto Repair Co.

J. J. Ashcroft, Belle Fourche, S. D., sold his interest in the Ashcroft Garage to B. O. Buchman of Buffalo, S. D.

J. L. Shuldheisz, Kulm, N. D., bought and consolidated the John Hiller and the John Renz garages and bought the Erbele building for a large motor repairshop.

R. W. Spellers, Wolsey, S. D., bought the Wolsey Garage from W. L. Seeley.

J. O. Ostness, Hingham, Mont., bought the C. W. Carter interest in the Red Trail Garage.

F. J. Winkler, Circle, Mont., bought a half interest in the Kossick Motor Co., Glendive, Mont.

R. Konopatzke, Steele, N. D., bought the Steele Motor Co. Garage.

Arthur Janes, Doland, S. D., has bought an interest in the Nissen Auto Co.

W. J. Nix, Roundup, Mont., has leased the W. N. Taylor Garage.

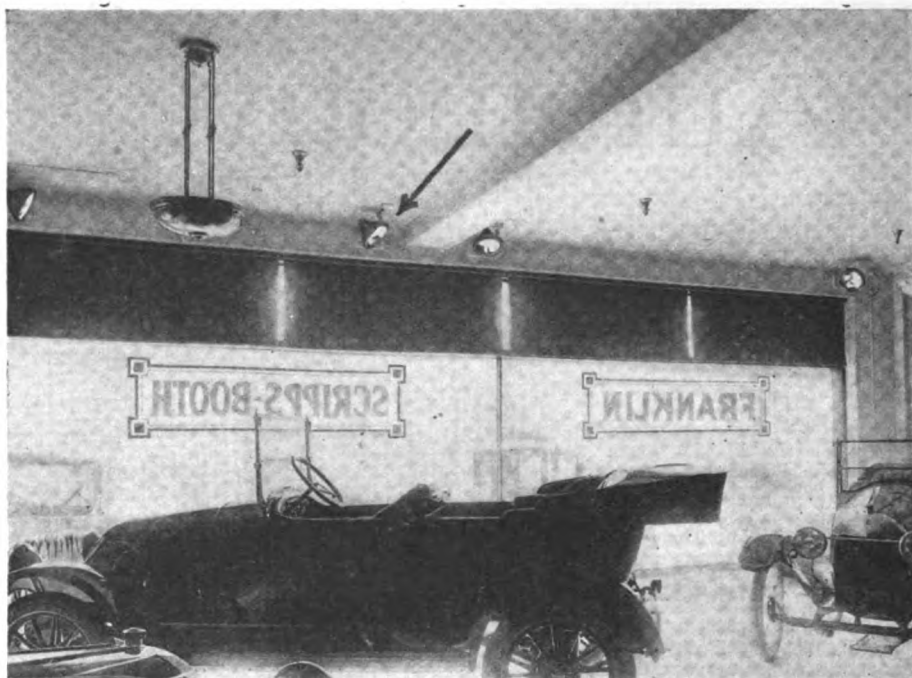
Chris Bertsch, Jr., Bismarck, N. D., has dissolved partnership with D. B. Spalding, Dickinson, N. D., in the Bertsch Motor Co., and taken over the business.

Jacob Hilgers, Barnesville, Minn., bought the Broadway Garage from Alvin Scheffler.

John McNamara and H. N. Marso, Harrold, S. D., bought the O. P. King Garage, Highmore, S. D.

The Auto Painting & Sales Co., Ottumwa, Iowa, has opened a salesroom and service station at Church and Ward streets.

Abe Lurie, Des Moines, formerly with the local Haynes salesrooms, has taken the Peerless agency and started the Lurie Motor Sales Co.



*Always more than one way to use a spotlight. For example, several might be arranged as this dealer has arranged some to help illuminate cars on display in the salesroom*

The Holman-Stevens Auto Co., Des Moines, has been succeeded by the Franklin Motor Co. and the salesrooms and service station of the old company at 1101 Locust Street will be retained by the new company. The capital of the new company will be \$20,000. A. M. Brackett is president; H. N. Adamson, vice-president and manager, and F. C. Stevens, secretary and treasurer.

#### New Garages

Criger & McBride.....Chariton, Iowa  
Nels Nelson.....Sioux Rapids, Iowa

#### MIDDLE WEST

The India Tire & Rubber Co., Akron, has appointed the Bielfield Tire Co., 623 Woodward Avenue, Detroit, distributor for the state of Michigan.

The Antigo Buick Co., Antigo, Wis., has been organized by E. H. Maxson, formerly of Stratford, Wis., to take over the garage, repair and dealer business of the Heck Motor Car Co., Antigo, Buick dealer. Otto Heck is retained by the new owner as manager of the mechanical department.

#### Cincinnati Ready for Convention

CINCINNATI, Sept. 9—The event of chief interest in automobile circles just now is the convention of the Ohio State Automobile Trades Association, which meets here on September 11. Most of the delegates will motor in. The session will begin with a luncheon at the New Gibson Hotel at noon and it is expected to conclude the business by 5 o'clock so that most of the delegates who do not live too far away may motor home. The speakers will include: A. E. Mitzell of Canton, president of the state association; R. A. Tingle, manager of the Standard Oil Co. of this city; J. A. Henderson of the Henderson-Overland Co., Youngstown, O.; R. R. Drake, manager of the Service Department of the New York Rubber Co. of New York. It was

hoped to have E. E. Peake present but he had to cancel his engagement. There will be an address of welcome by H. H. Brenner, president of the Cincinnati association. The luncheon is a complimentary spread from the local association.

#### First Eastern Canada Automotive Exposition

MONTREAL, CANADA, Sept. 5—Final arrangements are being completed for the first annual National Automotive Exposition of Eastern Canada, and Montreal will be placed on the Exposition circuit, which will avoid the dates clashing with the big automotive expositions which will be held in New York, Chicago, Detroit and other big American cities. It is planned to have exhibits of farm lighting outfits, tractors of all kinds; trucks of every description will also be on exhibition.

A scheme is being worked out whereby rebuilt cars will be shown and a complete line of automotive accessories is already assured. The entire proceeds will be devoted to the funds of the Montreal Soldiers' Wives' League, and the Leagues are already beginning to organize their various committees.

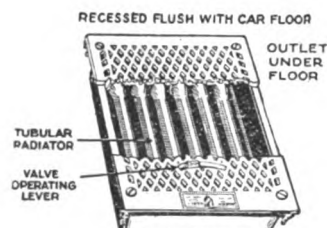
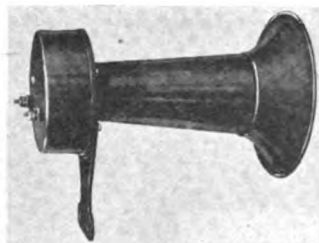
#### Puritan Gets Alco Parts

DETROIT, Sept. 6—The Puritan Machine Co. has completed arrangements with the American Locomotive Co. covering the purchase of the entire service repair parts business, including the existing stock of spare parts, tools, jigs, dies, blueprints, etc., covering Alco passenger cars and trucks formerly manufactured in Providence, R. I. The service business will be continued from the Providence plant for the present.

# Automotive Equipment

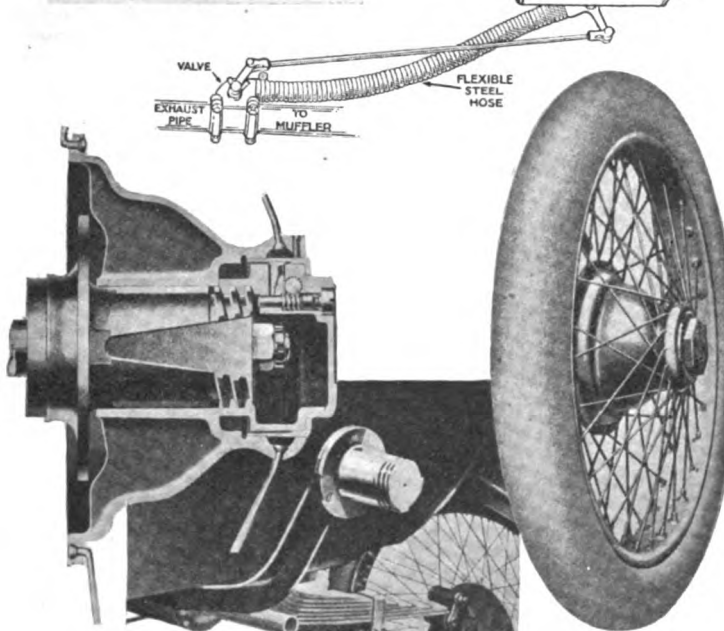
## GARFORD MOTOR HORN

An electric horn of the motor-driven type, which gives a short, positive note when the button is lightly and quickly touched, and a sharp, loud note when the button is held down. The horn is self-contained as far as it is possible to make it so. The two binding bolts are on the rear of the motor case, and the supporting bracket is intended to be fastened in any convenient place. Price, \$5.—Garford Mfg. Co., Elyria, Ohio.



## KOL-BEN WHEEL

A wire wheel having a double lock, one of which secures the other by a quarter turn with the wrench. This action also forces the wheel on or off. To prevent sticking or binding of the wheel on the hub the sliding parts are self-oiling. The hub is formed of a heavy casting, the 64 spokes are heavy gage and provision is made for taking up the wear caused by starting and stopping the car. All parts are rust-proofed and during the process of enameling the wheel is baked three times. An extra wheel carrier for either side or rear installation is furnished.—Kol-Ben Wheel Co., Detroit.

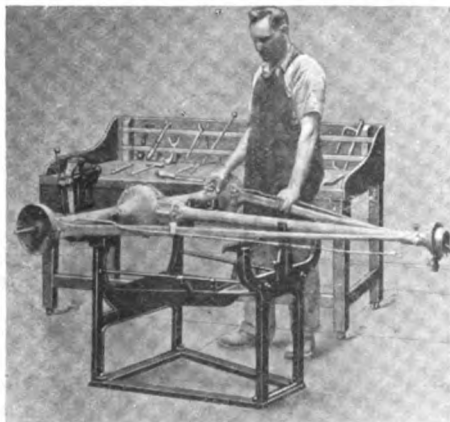


## NEW ECO PRICES

The Eco service stand which is a combined engine and rear axle stand for Fords is now priced \$32.50 and the Eco engine stand at \$25. The power attachment for the engine stand is \$17.50.—Western Mfg. Co., Oskaloosa, Iowa.

## GARFORD HAND HORN

A hand horn especially constructed to withstand hard usage on trucks and for other commercial work. The plunger is set at an angle of 45 deg., and the mounting bracket, which is unusually strong, provides for attachment at three points. The horn responds to either a light touch or a strong push. Price, \$3.50.—Garford Mfg. Co., Elyria, Ohio.



## GARFORD UNIVERSAL PUSH-BUTTON

A button for use in connection with electric horns. The button itself is large, and easy to get at, but without unnecessary bulk. Wiring connections are



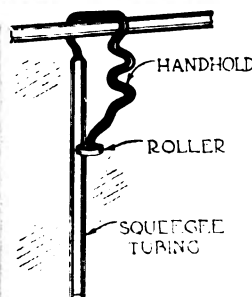
made through the back, so that no wires are visible, and the button is attached by two screws which pass through the two lugs. Price, 25 cents.—Garford Mfg. Co., Elyria, Ohio.

## PERFECTION CAR HEATER

This heater utilizes the heat of the exhaust gas, carrying it from a point ahead of the muffler through coils of the radiator and then outside the car. The degree of heat is regulated by a valve which controls the amount of gas passing through the radiator, or shuts it off entirely, the valve being operated by a rod on the floor close to the radiator. The radiator is covered with a nickel or enameled grating to prevent contact of clothes with the hot coils. Made in eight styles to fit every make and model of car, prices ranging from \$20 to \$30. Three styles of plates or gratings are available: flat, flush, foot rest, and heel rest.—Standard Parts Co., Heater Department, Cleveland.

## SEE-SAFE WINDSHIELD WIPER

A new model See-Safe windshield wiper in which the use of squeegee tubing increases the effectiveness of the device. The wiper either pivots on one spot on the shield, cleaning a wide arc, or it may be used to clean right across in a straight line. Movement is facilitated by a rubber roller located below the hand-hold. Comes in boxes of 1 doz. Price 50 cents.—Stadeker Metal Specialty Co., 358 W. Madison Street, Chicago.



## JEFFERSON BATTERY REPLACEMENT COILS AND FITTINGS

A line of battery replacement coils and fittings which are sufficiently flexible to displace any type of coil on battery-equipped cars. This flexibility is attained by the use of adjustable caps, terminals and mounting arrangements. A small stock of these coils enables a service station, garage or repairshop to deal with any emergency without delay. A folder giving data covering all standard battery ignition systems for the various cars from 1912 to the present is furnished.—Jefferson Electric Mfg. Co., 431 South Green Street, Chicago.





*The Byberry fair, near Philadelphia, drew quite a crowd of farmers, many of whom will buy tractors this fall*

## Tractors Draw at Byberry Fair

### *Half a Dozen Makes Demonstrated at Philadelphia County Exposition—Good Demand Evident*

PHILADELPHIA, Sept. 5—Demonstrations of various types of farm tractors with implement attachments and a motor truck show drew a large share of attention at the Philadelphia County Fair at Byberry, Sept. 2 to 5. The attendance for the four days was estimated at 25,000.

While the number of tractors exhibited was not large, the interest in their operation, the crowds around each machine and the inquiries from prospects more than made up for lack of models. Those shown were: Moline Universal 8-16, Waterloo Boy 12-25, Parrett 10-20, International 8-16, Mogul 10-20 and two Clevelands. There also was an Avery motor cultivator.

Small tracts within the fair grounds were plowed and harrowed and the use of cultivator, disc, manure-spreader and other attachments were carefully explained to inquirers by the demonstrators.

#### Heavy Demand for Tractors

The demand for tractors in Pennsylvania for fall work, say demonstrators, is heavier than ever. In fact, it is predicted that sales of tractors and attachments for the remainder of the year will exceed sales of the last eight months. This is based on actual sales thus far made and evidently sincere inquiries. Most inquiries thus far from Pennsylvania farmers have been for two and three-bottom machines and for such attachments as hay-loaders, hay-balers, manure-spreaders and potato-diggers.

The demonstrator for one tractor at the fair said that he recently had sold eight tractors, for December delivery, to a Womelsdorf, Pa., dealer. Demonstrators distributing printed matter from their tents said that they had reason to expect many inquiries from those who took the pamphlets and folders, but asked no questions at the time. Then, of course,

there are always potential prospects among the farmers' friends who were unable to attend the fair, but into whose hands such matter might come.

Two large tents, each 200 ft. long, housed the show of commercial cars under the auspices of the Motor Truck Association of Philadelphia. This was the first exhibit of the kind it ever had made as a body. The demand for space was so great that the committee in

charge, consisting of J. C. Schwartz, S. M. Earley, A. W. LaRoche and W. H. Metcalf, the secretary, had to curtail the allotments of space. Inquiries here, too, showed the farmer alive to automotive improvements and a considerable number of sales is expected to develop therefrom. The large number of farmers' motor cars parked about the grounds attested that the Pennsylvania agriculturist already is fairly well supplied in some districts with passenger vehicles.

The following were exhibitors in the association's tents:

Lee J. Eastman, Packard Motor Car Co.; B. J. Rowe, Rowe Motor Mfg. Co.; M. J. La Roche, LaRoche Bros., Inc.; D. Walter Harper, Commerce Philadelphia S. & S. Co.; S. Stankowitch, Thornton-Fuller Auto Co.; J. Harry Schumacker, J. H. Schumacker & Co.; A. M. Biddle, Jr., Federal Sales Co.; F. Fanning, Fanning-Mathis Co.; L. S. Bowers, L. S. Bowers Co.; E. J. Berlet, Stability Motors Co.; Charles J. Swain, Swain-Hickman Co.; J. C. Schwartz, Gomery-Schwartz Motor Car Co.; O. W. Doolittle, Foss-Hughes Co.; Brockway Motor Truck Co.; H. D. Watson, International Motor Co.; E. W. Burnshaw, Jr., Girard Automobile Co.; D. H. Zimmerman, International Harvester Co.; Terwilliger Equipment Co.; J. P. Cranston, Vim Motor Truck Co.; Maxwell-Chalmers Co.; Eastern Motors Corporation and the Truxtun Sales Company of Philadelphia.

Other exhibitors not in the association tents follow:

Acason Sales Co. of Philadelphia; C. Edwin MacNair, Fulton trucks; Cohnocksink Truck & Wagon Co.; Oxford Semi-Truk; Day-Elder Worm-Drive trucks; Dodge Bros.; Sterling trucks; Pierce-Arrow trucks; Firestone Tire & Rubber Co.; Crew-Levick Co.; Perfection Oil, and the Coffield Tire Protector. Farm-lighting systems exhibiting were the Delco-Light and the Genco.

## *Automotive Idea Dominates Indianapolis*

### Trucks and Tractors Principal Points of Interest at State Fair—Rain Spoils Demonstration

INDIANAPOLIS, IND., Sept. 7—How the automotive idea dominates in all exhibits of equipment intended to interest the farmer was brought out clearly at the Indiana State Fair which came to a close here to-day.

Where used to be long rows of tents and booths filled to overflowing with all kinds of horse draw equipment and vehicles there are to-day only automobiles, trucks, commercial cars and tractors, with the power equipment which goes with the last. Nothing in the equipment or vehicle line seems to attract the farmer any more unless it includes some application of the internal combustion engine. He crowds around motor cars and tractors and ignores everything else but the live stock and the races.

The automobile display at the Indiana fair this year was not up to the standard set at previous fairs. Considering the conditions in the automobile trade, however, it was very creditable. The show was conducted under the manage-

ment of the Indianapolis Automobile Trade Association and Assistant Secretary John B. Orman maintained headquarters on the grounds throughout the week.

The passenger car display was under a tent almost big enough to cover a three-ring circus, while the truck and commercial car exhibits were in an adjoining tent which was almost as big. In all there were 60 individual exhibitors and 78 separate displays.

The show was put on against the objections of some members of the association. Their objections took the form of protests against the advisability of holding a show with conditions in the trade as they are at present. In a majority of instances it developed, however, that the real reason for protesting was because the objectors had no cars to display and naturally did not want the others to take advantage of that fact. The majority won and the show was put on nevertheless.

A noticeable feature of the display this year was the absence of salesmen. No effort at all was made to sell cars and such business as was done came without solicitation. In a way this deprived the exhibit of considerable of the interest which ordinarily attaches to it. The general effect was one of apathy as though tacit recognition were being given to the fact that something was wrong with the motor car business.

All was animation around the tractor exhibits, however. In all 25 makes of tractors were shown, and in several instances a number of models of a make. Probably no feature of the fair aroused more interest or drew larger and more constant crowds. All day and every day the section devoted to tractors and power equipment was crowded.

The usual number of stunts were pulled. Tractors climbed walls, got into and out of deep holes, demonstrated their ease of control and short turning abilities, gave exhibitions of their speed, etc. These things were done repeatedly and always were watched by a dense and intensely interested crowd of people. Owing to the wet condition of the quarter stretch the plowing demonstration which was to have been a feature of the fair program for Friday was abandoned.

#### Several New Tractors

Several new and unusual tractors were on display. Among the new were the Star and the Besser; among the unfamiliar was the Whitney, while the unusual was represented by the Advance-Rumely 8-16.

The Star is a small, one-man machine, manufactured by the Star Tractor Co., Findlay, Ohio. In its design and construction the same general features presented by the Moline Universal have been followed closely, but the Star is a much smaller and lighter machine. It weighs but 1700 lb. and will sell for \$900. It hardly will do more than 3-horse work on the drawbar, but still has sufficient power to pull most of the usual horse drawn equipment of the farm. It has a clearance of 26 in. and is adapted to the cultivation of row crops. In fact, it is a miniature Moline. For the coming year the Star will be marketed by the Indiana Silo Co., Anderson, Ind., and at the present time negotiations are under way to move the manufacture from Findlay to Anderson, as there are better facilities for volume production at the latter point.

The Besser is a 15-30, 3-plow general purpose, 4-wheel tractor. It is made in three closely resembling models and sells, according to model, for \$1,595, \$1,695 and \$1,895. It is made by the Besser Mfg. Co., Alpena, Mich., and has a sturdy and reliable look. The production for 1919, which will not exceed 150 machines, will be somewhat different than the model shown this week at Indianapolis. The shape of the frame will be different and the engine will be placed lengthwise of the frame and the present transmission will be replaced by a Nuttall.

The Whitney is a 4-wheel, chain drive, 2-bottom tractor with a drawbar pull of

## Gasless Sunday Saves About 150,000 Barrels

### Fuel Administration Checks Cars and Expects Bigger Saving— Senate Inquiry Likely

NEW YORK, Sept. 9.—It is estimated that the first gasolineless Sunday saved between 100,000 and 150,000 barrels of gasoline. These are the figures of the National Petroleum War Service Committee of the Fuel Administration. This bureau has not yet compiled figures for the second Sunday though it is estimated that the saving was greater due to a better understanding of the request.

A week ago Sunday, the Fuel Administration had a census taken of all the cars running in the more important cities East of the Mississippi. Men with counters were stationed at various key points on Saturday and made a check of the number of cars passing between 2 and 4 p. m. The same men made a similar count on Sunday during the same hours and as a result it is estimated that the percentage of reduction in the use of cars varied from 95 per cent in Illinois to 63 per cent in Virginia. Following is the census.

	Sat., Aug. 31	Sun., Sept. 1	% C. of Reduction	No. of Cars Registered
Illinois	19,997	1,006	95	340,292
Ohio	28,774	1,952	93	425,789
Wisconsin	2,181	183	90	182,700
Dist. of Columbia	7,939	774	90	36,969
Kentucky	3,596	891	90	57,543
West Virginia	826	107	87	36,400
Louisiana	3,269	429	87	38,000
Tennessee	10,115	1,265	87	54,000
Indiana	2,165	334	85	209,346
Maryland	6,400	989	84	63,827
Florida	2,282	361	84	43,746
Maine	906	149	83	39,538
Massachusetts	1,947	354	81	166,384
Alabama	3,589	668	81	44,859
Pennsylvania	46,923	8,765	81	344,877
Connecticut	8,592	1,721	80	75,900
Rhode Island	3,396	625	80	26,399
New Jersey	14,663	2,805	80	137,322
Georgia	4,750	906	80	89,876
New York	17,627	4,617	74	422,853
Mississippi	2,016	583	71	37,500
North Carolina	906	282	68	62,071
South Carolina	680	230	66	48,350
Michigan	6,378	2,245	65	242,712
Virginia	1,499	549	63	65,000

1600 lb. and a rating on the belt of 18 hp. The Whitney is not a new design, but rarely has been shown before. It is built by the Ohio Mfg. Co., Upper Sandusky, Ohio.

The Advance-Rumely 8-16 is distinctively a plowing machine and is unique in construction. The plows are attached under the frame of the tractor and directly behind the big drive wheel. When the 8-16 is used for hauling it is run backward, as the drawbar is on the front end when used for plowing. It is 3-wheel type.

The following concerns were represented among the tractor exhibits: Star Tractor Co., Findlay, Ohio; Elgin Tractor Corp., Piqua, Ohio; Huber Mfg. Co., Marion, Ohio; The Russell & Co., Mas-

It has not been stated yet just how long these gasolineless Sundays are to be continued. The Fuel Administration let it be known in the first place that probably the first of October would see the end of them.

In the mean time the United States Senate has heard of the restriction and wants to know more about it. A resolution has been adopted calling upon the Fuel Administration for data covering the actual production and consumption of gasoline. The object is to find out whether there really was a need of the restriction. Some Senators appear to feel that the Fuel Administration acted without a full knowledge of the facts and they want the whole matter cleared up.

#### Truck Exhibit in St. Louis

ST. LOUIS, Sept. 9.—The Commercial Car and Service Bureau of the St. Louis Automobile Manufacturers' and Dealers' Association has decided to hold a truck and tractor exhibit this fall, the date and place to be decided later. Robert E. Lee, secretary of the Bureau and who has managed the Automobile Shows, will be manager. If a suitable building cannot be found, a tent will be erected. The show committee appointed by President Charles E. Lightfoot, manager of the G.M.C. branch, is: L. H. Amrine, of the Scudder Motor Truck Co.; H. C. Bailey of the International Mack, and W. E. Rehbein of the Garford.

HARTFORD, Sept. 6.—Several makes of trucks and passenger cars were exhibited at the annual Connecticut fair which closed at Charter Oak Park this evening. All the exhibits were housed in tents. The largest truck display was that of the Reo, Republic and Duplex staged by Russell P. Taber, Inc. Several makes of tractors and farming implements, including the Fordson were displayed. Ground was plowed and harrowed throughout the week. The attendance save the opening day, Labor day this week, was light. The automobile dealers when questioned were not very much impressed with the value of the exhibition.

sillon, Ohio; Cleveland Tractor Co., Cleveland; Besser Mfg. Co., Alpena; Moline Plow Co., Moline; Port Huron Engine & Thresher Co., Port Huron; Wallis Tractor Co., Racine; Midwest Engine Co., Indianapolis; J. I. Case Threshing Machine Co., Racine; Emerson-Brantingham Co., Rockford; Interstate Tractor Co., Waterloo; Waterloo Gas Engine Co., Waterloo; International Harvester Co., Chicago; Henry Ford & Son, Dearborn; Rock Island Plow Co., Rock Island, Ill.; Bull Tractor Co., Minneapolis; Avery Co., Peoria; Ohio Mfg. Co., Upper Sandusky; Advance-Rumely Co., La Porte; La Crosse Tractor Co., La Crosse; Parrett Tractor Co., Chicago; Aultman-Taylor Machinery Co., Mansfield, Ohio; Turner Mfg. Co., Port Washington, Wis.



## Abandon Jobber Show; But Will Hold Meeting

### Exhibition Called Off for Patriotic Reasons—Municipal Pier Ex- hibit To Be Held

CHICAGO, Sept. 9—The National Association of Automobile Accessory Jobbers has decided not to hold its show, which was scheduled for the week of Oct. 28 to Nov. 2, at the Coliseum. The reasons for calling off the exhibition are the same as those given by the National Automobile Chamber of Commerce for calling off the National shows.

It is probable that the annual convention of the N. A. A. J. which is to be held at the same time will be carried through with the show feature eliminated. This decision was announced in a bulletin sent to all members Saturday by Commissioner Webster.

Abandonment of the National motor car shows at New York and Chicago and the Jobbers show leaves the exhibition at the Municipal Pier known as the National Exposition of Automotive Accessories as the practically last and only event of the kind on the program. This exhibit which opens Saturday, Sept. 14 and runs until the following Saturday, has a good list of exhibitors particularly of acces-

sories. In addition there are a number of tractor, truck, truck former, and parts manufacturers who are among the list of exhibitors. Passenger car exhibits will be only incidental.

It is probable that the Pier show will benefit somewhat by the discontinuance of plans for the jobbers exposition, because there undoubtedly are several jobbers who will take space in the pier show, now that the one at the Coliseum is not to be staged. Reservations of space are being held open until Wednesday on this account.

Plans are all in shape for the opening Saturday and the decorations are about completed and the novelty at the show at the Pier may be calculated on to attract a number of people, who otherwise would not attend. Transportation facilities are exceptionally good parking space for hundreds of cars being provided and both the surface lines and bus lines provide other transportation.

### Botterill in Transport Work

DENVER, Sept. 6—Tom Botterill, chairman of the Highways Transport Committee of the Colorado State Council of Defense, has just been appointed by the United States Highways Transport Committee as regional chairman to work with the committees in charge of motor transport movements also in Utah, New Mexico and Wyoming.

## Urges Winter Tractor Sales Work on Dealers

### Bryant, Fordson Distributer, Starts Winter Selling Propaganda— Storage Permitted

COLUMBUS, Sept. 9—E. H. Bryant, Fordson tractor distributor for 72 counties in Ohio is starting propaganda to educate dealers in better business methods during the winter. The plan is to have farmers continue buying Fordson tractors during the winter months and in that way be in a position to start their spring work without delay. To that end dealers are instructed to visit prospects and to impress upon the farmer the necessity of getting his new tractor early.

While the same methods followed in the sales of Ford cars will not be adhered to entirely still some of the features of that plan will prevail. Ford dealers have not been permitted to store cars during the winter months but have been urged to sell to the public. Dealers in Fordsons will be permitted to store tractors but because of the fact that the tractors must be paid for at the time of delivery, this will not be followed to any great extent and dealers will be working all winter on their sales.

## What's What in the "Show" Situation

(Continued from page 9)

show how to diagnose troubles and how to keep systems from breaking down.

Plow men would explain all about how to use and care for plows, and how to make some of the hitches and adjustments that are not well understood to-day.

Other farm machinery and its use and adjustment would be explained.

Engine experts would explain engine troubles and how to locate and correct them.

Carbureter men would save thousands of gallons of gasoline by showing how to get the most out of a carbureter.

Every man who had a device in these classes could give lectures, show illustrations, answer questions and be a regular university instructor during the automotive week.

These courses could be given in the exposition building or in some dealer's establishment or in the places of business of the lecturers.

*The essential point is that there should be a program of these events, arranged before the week begins and distributed in printed form. There should also be a big bulletin board at the exposition showing hour by hour what is going on and where. This would enable those interested to arrange their schedules and cover the whole course, or as much as was desired.*

In connection with all this provision should be

made for courses in fuel and food conservation by Government experts. Other experts might talk on what bonds are and answer questions regarding Government and general business finance.

Other teachers should take up accounting, and show what costs mean to the farmer, the business man, the dealer and others. Separate sessions could be arranged for different lines of business.

Some of last winter's expositions touched on this automotive week idea. It should be expanded this year and put over as near 100 per cent as possible.

With all these facts to consider dealers should go slowly in acting on the question of this year's exposition. It is better to wait a while before saying none will be held. Bear in mind these points:

1—*The local exposition is not governed by the conditions that apply to the two National exhibitions.*

2—*The dealer's automotive products are essential to America's welfare.*

3—*There is need for teaching the people the use of time saving and labor conserving automotive apparatus.*

4—*An automotive exposition and automotive week would be a wonderful benefit to the nation generally.*

5—**WAIT 30 TO 60 DAYS BEFORE TAKING DEFINITE ACTION.**

## Ford Passenger Car Manufacture Stopped

**Parent Plant and All Branches 100%  
on War Work—Continue Trucks  
and Tractors**

DETROIT, Sept. 10—The manufacture of Ford passenger cars is to be entirely stopped during the period of the war and from this time forward the entire resources of the Ford Motor Co. are to be devoted to government work. The Ford plant will be used entirely for the production of Liberty engines, tanks, ambulances and such other work as the Government may desire.

The decision to devote the entire Ford resources to war work applies also to the 31 branch assembly plants scattered throughout the large industrial centers of the country. Six of these, located in Cambridge, Mass.; Louisville, Ky.; Philadelphia, St. Louis, Washington and Long Island City, already have been turned over entirely to the Government and the others will be turned over rapidly.

Abandonment of the manufacture of passenger cars will not affect the production of trucks and tractors. Trucks are considered essential by the War Industries Board and their production will be continued. The Fordson tractor is produced by Henry Ford & Son in an entirely separate plant at Dearborn, Mich., and its production will be continued.

The conversion of the Ford passenger car production facilities to 100 per cent war work has not been entirely unexpected. As long ago as November there were persistent rumors that the manufacture of passenger vehicles was to be eliminated. These, however, were denied at that time.

Immediately following the denial of these rumors announcement was made from the Ford plant that the top notch in production had been reached, the factory having turned out a total of 3000 cars on Nov. 23.

This production was maintained practically constant until early in February, when it was cut down 50 per cent and remained practically constant until nearly the end of June. At that time the production had been further reduced to 750 cars a day.

Beginning Aug. 1 production was further reduced to 350 passenger cars a day. The production of trucks has been steadily increasing until at the present time approximately 400 are being turned out daily.

During the fiscal year ending July 31 last the production of the Ford Motor Co. totalled approximately 700,000 cars as compared with 785,000 during the last year. On June 10 there were unfilled orders on hand for more than 110,000 cars.

### Demonstration Helps Tractor Sales

DECATUR, ILL., Sept. 6—Following the recent tractor demonstrations in Macon county, sales have greatly in-

creased, one dealer here closing a sale at 10.30 o'clock at night, while the buyer would have driven the machine home at that hour, if it could have been gotten ready. The machines which are appealing to farmers of this section with probability of deep mud and soft ground, are the lighter weight machines, pulling two plows and costing \$1,200 to \$1,800. There is little demand here for the larger, heavier type of machine. The appeal of the government for increased wheat acreage has greatly stimulated fall plowing and means the sale of many tractors in central Illinois.

## Missouri River Boats Stop Running

**Have Carried All Traffic Trucks  
Distributed From Kansas City**

KANSAS CITY, Sept. 9—Navigation of the Missouri River between St. Louis and Kansas City was suspended for the winter on Sept. 3, when a steamer with two barges arrived at Kansas City. The equipment has been taken over by the federal authorities, and it will be used in river transportation on the Mississippi below St. Louis. The barges have brought many motor cars to Kansas City this summer, and much stock for accessory dealers.

All the traffic trucks distributed from the Kansas City branch have been brought from St. Louis on the barges in shipments of six to nine. The trucks are run onto the roofs of the barges at St. Louis, and run from the barges onto the wharves at Kansas City.

The river shipment has saved some freight expense, but has been most economical in its saving of labor in loading into freight cars. There has also been a marked advantage in time, the river shipments reaching destination within 5 days of leaving factory, while by railroad the shipments would have consumed from a week to a month.

The Kansas City Missouri River Navigation Co. is now without equipment, but its pioneer work in river navigation the past few years has demonstrated its feasibility, and it is expected that next spring the Government will operate boats on the Missouri, or will make it easy for the Kansas City company to get started again.

### Tractor Dealers Organize

SPRINGFIELD, ILL., Sept. 9—The Central Illinois Tractor Dealers' Association was organized at a meeting held here this week, officers being elected as follows: President, B. R. Butts; secretary, F. J. Sweigert; treasurer, Henry G. Garvey. The purpose of the organization is to secure greater co-operation among the men who represent the various makes. Service and price problems were discussed at the initial meeting. There will be a series of meetings, and salesmen, distributors, dealers and factory representatives will get together and discuss subjects which will be of mutual interest and adopt any measures which will be beneficial to all.

## Milwaukee Exhibition Is Really Automotive

**Trucks and Tractors Help Make Up  
for Lack of Cars—Some Tractors  
Demonstrated**

MILWAUKEE, Sept. 9—Despite the restrictions imposed by the necessities of war, the fourth annual fall show of the Milwaukee Automobile Dealers' Association, which is being conducted this week in conjunction with the Wisconsin State Fair, is the equal in size of any previous exposition. A small decrease in the number and variety of passenger cars is more than compensated for by enlargement of the motor truck section, and for the first time the tractor is being shown side by side with its older brothers.

The show occupied all of the big Motor Hall on the State Fair Grounds at West Allis, a suburb located about 5 miles west of the city. The building is 100 x 375 of reinforced concrete, with steel sash. Originally the sides and ends were open, but several years ago the gaunt structure was enclosed and transformed into a real exposition building. The interior is beautifully decorated in the national colors.

The main idea of this year's show is to appeal to the farmer and the merchant of the interior of the State. This has been the object of past shows at the State Fair, but under the newer conditions which have arisen, the utmost attention is being given to strictest utility. The fall show is a state exposition, while the annual show in January is somewhat more of a "citified" display as a matter of relative value to the respective patronages.

While the tractor show at the fair this year is again an outdoor exhibition, partly under canvas, several Milwaukee distributors and dealers who recently have taken on tractor lines are showing these in connection with their passenger and commercial car exhibits. Additional machines are provided for the purpose of giving demonstrations on the outside, either on a section set aside in the fair grounds, or in neighboring fields, owners of which seem to be glad to have some of their fall plowing done at no expense to themselves.

The show is open from 8 a. m. to 8 p. m. for the duration of the fair, which closes Saturday evening, Sept. 14. As usual, an admission of 10 cents, plus the regular war tax, is charged, aside from the admission fee to the fair proper.

### Classify Essential Industries

WASHINGTON, Sept. 8—Seventy-four industries are named in a new preference list, just compiled and issued by the War Industries Board, as the primary industries of the nation, entitled to preferential treatment because of war or national interest demands. The industries named, together with a list being compiled of 6500 individual plants engaged in whole or part on war work,

will receive preferential treatment through priorities on all matters of:

Fuel	Materials
Labor	Transportation
Capital	Facilities

The list will also be used by the War Department as the guide for allowing industrial exemptions from the draft.

The numerous factories listed individually are so handled because the industries to which they belong were not entitled to preferential treatment as a whole. "In numerous instances," says the war board, "individual plants have been found entitled to high preference while the industry to which they belong is not." Motor trucks, for example, are not specified in the list of industries, and those truck plants entitled to preference treatment will be listed individually, as will passenger car and motorcycle manufacturers engaged in work entitled to preference in priorities.

#### Has Charge of All Tanks

WASHINGTON, Sept. 6—Louis J. Horowitz, formerly president of the Thompson Starrett Construction Co., New York, has been appointed Assistant Chief of Ordnance, in charge of tanks. Horowitz will have complete authority on the engineering, manufacturing and inspection of tanks. Brig.-Gen. J. T. Thompson, U. S. A., retired, has been made Director of Ordnance Training and will work out the types of training to be given the personnel of the Ordnance Department and will make provisions for this training. Capt. S. E. Blunt has been appointed Employment Supervisor in charge of the personnel employment bureaus of the several arsenals and other Ordnance establishments.

#### Duplex Truck Becomes Oshkosh

OSHKOSH, Sept. 9—The Wisconsin Duplex Automobile Co., Oshkosh, Wis., which recently completed development work and is now engaged in a regular production of commercial chassis, has changed its corporate style to Oshkosh Motor Truck Mfg. Co., and adopted the trade-mark of "Oshkosh" for its product. It is planned to manufacture from sixty to seventy-five trucks for delivery by Jan. 1. The first five cars of the initial commercial output will be ready during the coming week and most of them will go to purchasers in and around Oshkosh. A sales organization is now being perfected and the company plans to undertake an extensive advertising campaign.

KANSAS CITY, Sept. 9—The Southern Motor Mfg. Association has opened offices in the Beatty Building, Houston, Tex., having moved from Dallas. The association announces plans for erecting a plant at Houston for manufacturing tractors, motors, trailers and bodies, and the adding of passenger cars to the production after the war. Officers are: Jacques E. Blevins, general manager; J. S. Arthur, assistant general manager; G. E. Shively, auditor; F. A. Blevins, supervisor; Frank J. Ryan, local manager; W. K. Brown, cashier.

## More Makers Advance Passenger Car Prices

### Overland, Cadillac, Nash and Kissel Boost Lists—Truck Prices too, on the Rise

DETROIT, Sept. 5—The Willys-Overland Co., Toledo, has increased the prices of all its models, effective Sept. 1, as follows:

Model	Old Price	New Price
90 (T) Touring.....	\$895	\$1095
90 (R) Roadster.....	895	1095
90 Country Club.....	925	1145
90 Sedan.....	1385	1665
90 Panel Delivery.....	895	1045
90 Express Delivery.....	875	1025
1200-lb. Express Delivery	1075	1150
1200-lb. Spec. Open Panel Delivery, right-hand drive.....	1075	1150
85-4 Touring.....	1025	1175
85-4 Roadster.....	1025	1175
85-6 Touring.....	1300	1495
85-6 Roadster.....	1300	1495
85-6 Coupe.....	1550	1750
85-6 Sedan.....	1720	1920
89-6 Touring.....	1525	1775
89-6 Club Roadster.....	1525	1775
84-4 Touring.....	1650	1925
88-4 Coupe.....	2600	2850
88-4 Sedan.....	2650	2950
88-8 Touring.....	2500	2750
88-8 Coupe.....	3175	3425
88-8 Sedan.....	3200	3475
88-8 Limousine.....	3300	3500

#### Cadillac Prices Increase

DETROIT, Sept. 5—The Cadillac Motor Car Co. has advanced its prices \$300 on the following models, effective Sept. 1:

Model	New Price	Old Price
Touring Car.....	\$3520	\$3220
Phaeton.....	3520	3220
Roadster.....	3520	3220
Brougham.....	4390	4090
Suburban.....	4640	4340
Limousine.....	4695	4395
Landaulet.....	4795	4495
Town Limousine.....	4660	4330
Town Landaulet.....	4810	4510

F. O. B. Detroit, not including war tax.

#### Nash Cars and Trucks up

KENOSHA, WIS., Sept. 10—The Nash Motors Co. increased the price of its cars and trucks on Sept. 1 as follows:

	New Price	Old Price
5-pass. touring.....	\$1490	\$1395
7-pass. touring.....	1640	1545
4-pass. roadster.....	1490	1395
6-pass. sedan.....	2250	2085
4-pass. coupe.....	2250	2085
1-ton chassis.....	1650	1595
2-ton chassis.....	2175	2075

#### Kissel Raises Prices

HARTFORD, WIS., Sept. 10—The Kissel Motor Car Co. has increased the price of its cars and trucks as follows:

	New Price	Old Price
4-pass. roadster.....	\$1743	\$1645
4-pass. sedan.....	2293	.....
5-pass. touring.....	1743	1645
5-pass. sedan.....	2293	.....

Trucks		
General Utility, 2-ton.....	\$2073	\$1885
Freighter, 2½-ton.....	2832	2575
Heavy Duty, 4½-ton.....	3705	3550
Dreadnaught, 6-ton.....	4785	4350

#### Jones Car Prices Advanced

WICHITA, Sept. 7—The Jones Motor Car Co. has advanced its prices as from Sept. 1 as follows:

	New Price	Old Price
27-B 7-pass. ....	\$2,100	\$1,875
Sport. 4-pass. ....	2,350	.....

Several minor refinements have been

incorporated in the 7-pass model and the 4-pass. Sport model is fitted with wire wheels, 32 x 4½ in. cord tires and paint and upholstery colors are optional.

#### Passenger Car Pledge

WASHINGTON, Sept. 10—No special priority class rating has been assigned to the passenger car industry and it will be necessary for each manufacturer to make application for the steel he requires. The preference in priority will be graded, possibly, by the class of steel required. A "passenger automobile manufacturer's pledge" has been approved by the War Industries Board and must be filled in by every manufacturer who desires to secure steel and filed with the Automotive Section of the Board. After the pledges have been signed and sent in, the manufacturer may make application to the Director of Steel Supply, War Industries Board, Washington, for a permit to purchase the steel or manufactured steel products.

The manufacturer's pledge is as follows:

War Industries Board,  
Washington, D. C.

Gentlemen:

Attention: Automotive Products Section

The undersigned hereby pledges itself:

(1) Not to purchase iron or steel or iron or steel parts or equipment except under permit from the Director of Steel Supply.

(2) To limit its purchase of materials, parts, equipment and supplies to an amount which does not exceed either

(a) The amount absolutely necessary to match up its stocks now on hand, or

(b) The amount necessary to permit a production of passenger automobiles and all repair parts therefor for the six months ending Dec. 31, 1918, not in excess of 25 per cent of its production for the calendar year 1917.

(3) That it will conserve and economize in every possible way its stocks of iron and steel and their products now in its hands, or that may come into its possession, and will release on request of the War Industries Board to such other manufacturer of passenger automobiles as may be designated by the said board such of its stocks as can be utilized by such other manufacturer and which are not required by it for either the limited production above specified or for war work.

(4) That it will from time to time render such reports of its activities under oath or otherwise as may be called for by the War Industries Board.

Name of Manufacturer.....

Official Title.....

Address.....

Manufacturing concerns requiring such metals should make application for steel sheets, carbon forging steel, alloy steel, strip steel, pig iron, bars and cold rolled steel. Assembly concerns should make application for the principal units such as motors, axles, springs, and so forth. Concerns which are engaged in both manufacturing and assembling automobiles will make application for the classes of steel needed and separate application for the completed units manufactured of steel which they require.

## Prominent Tradesmen Assume New Duties

### Resignations and Promotions Place Workers in New Places

**E. M. McLean** has joined the Oneida Truck Co., Green Bay, Wis., where he will be connected with the office of the Director of Sales. He was formerly advertising manager of the Four-Wheel Drive Motor Co. and more recently advertising and sales manager of the Stegeman Motor Car Co., Milwaukee.

**Ralph J. Handy**, former distributor of the Tonford truck attachments in Detroit, has become sales manager of the Lauton Truck Co., Youngstown, Ohio.

**Albert Lind** has been appointed retail sales manager of the Hartford Branch of Willys-Overland, Inc., to succeed Robert J. Flynn, lately resigned to become president and treasurer of the recently organized Hartford Scripps-Booth Co. Lind will also retain the managership of the used-car department.

**David B. Roberts**, Hartford, Conn., proprietor of the Hartford Buick Co., has joined the government aircraft production forces, and reports at Washington Sept. 6.

**John E. O'Connor**, Hartford, Conn., has resigned as manager of the local branch of the Texas Co., and will devote his time to three filling stations which he has established. He is succeeded by James N. Macdonald, late of the A. C. Hine Co., Oakland and Cole distributor.

**W. C. Anderson**, manager of the Ford Motor Co. assembling plant at St. Louis, has been transferred to Chicago following the turning over of the St. Louis building to the quartermaster's department of the United States Army. He will have charge of an assembling plant in Chicago for the present.

**W. D. Roach**, manager of the parts department of the Weber Implement & Automobile Co., St. Louis, has joined the Marines.

**Wastel Gray**, recently manager of the truck department of the Western Automobile Co., Pierce-Arrow distributor, St. Louis, has joined the staff of the Goodyear Tire Co. in that city.

**E. P. Mussler**, for several years in charge of the service department of the De Luxe Automobile Co., St. Louis, has been made general manager of the Master truck agency, that city.

**L. F. Collins** has been appointed truck sales manager of the Nash Motors Co. This position was left vacant by H. C. Hart, who recently received a captain's commission in the Ordnance Department of the United States Army.

**E. B. Foote**, who has been associated with the Jaxon Steel Products Co. for some time as a member of the sales department, has been appointed sales manager of the wheel division, 3066 West Grand Boulevard, Detroit.

**Owen C. Wolfe**, a former Hartford (Conn.) motor car dealer, has been commissioned a first lieutenant in the Ordnance Department, U. S. A.

**Clinton W. Hayward**, Hartford, Conn., for the past 5 years office manager of the Elmer Automobile Co., Ford distributor in northern Connecticut, has joined the truck sales staff of Russell P. Taber, Inc.

**Howard D. Graves**, Hartford, Conn., has resigned as sales manager of the local branch of the Packard Motor Car Co. of New York. He expects to enter the army soon.

**George C. McMullen** has been appointed Western representative of the Timken Roller Bearing Co., with headquarters in San Gabriel, Cal.

**W. G. Bell**, for the past 4 years assistant sales manager in the Dominion of Canada for the Studebaker Corp., has been appointed Canadian sales manager of the Cleveland Tractor Co., Cleveland.

**William P. Stout** has resigned his position as technical advisor to the Aircraft Board at Washington and has returned to Detroit to take up the manufacture of a plane of his own design.

**John Squires** has resigned as general manager and chief engineer of the Signal Motor Truck Co., Detroit, his duties as manager being taken up by F. W. Henderson, and those of chief engineer by S. Deutsch.

### Tire Filler Makers Convene

**CHICAGO, Sept. 9**—Twelve manufacturers of tire filling products have called an "Automobile Tire Economy Conference" to be held in the Congress Hotel Sept. 15 to 18. The object of the gathering is to form a national association of standard tire filler manufacturers and to submit to government bureaus a war-time program for salvage of tires. Frank D. Mayer is temporary secretary. The tire filler manufacturers interested are: The Essenkey Products Co., Chicago; Peerless Tire Filler Co., Chicago; Dahl Punctureless Tire Co., Minneapolis; Pan-American Rubber Co., Milwaukee; National Rubber Filler Co., Midlothian, Tex.; Panama Rubber & Equipment Co., St. Louis; Wolverine Tire Cushion & Accessory Co., Detroit; Rubberair, Inc., New York; Better-Air Co., Philadelphia; National Synthetic Tire & Rubber Co., New York; Universal Tire Filler Co., Portland, Ore.; National Tire Cushion Co., Kansas City.

### 1200 Military Tractors a Month

**WASHINGTON, Sept. 6**—Production of military tractors is now averaging 1200 per month, according to a statement made here this week by the Acting Secretary of War. He stated further that this production is "not nearly what it should be."

## Demand for Used Cars Excellent in Canada

### Calgary Merchants Have Difficulty Getting Enough—Prices Con- tinue to Rise

**CALGARY, ALBERTA, Sept. 5**—Traffic in used cars has now reached such proportions that dealers are having difficulty in procuring them fast enough to take care of the increasing demand. The price of used cars has also advanced. The number of new cars available has also been much reduced owing to the fact that new cars are so hard to get this year. In previous years when new cars were sold, owners turned in their old cars, which placed them on the market. This year this supply has been greatly decreased.

Dealers report that used cars this year bring nearly the price of new cars in former years, but owing to the general advance in price of most of this year's cars, it is doubtful if the price is out of proportion to that paid in the past.

Many people who would like to sell their cars hesitate to do so, fearing that they will be unable to secure other cars at a price that would make such a trade profitable for them.

The dealers are using special care this year, too, in overhauling used cars and putting them in condition. The increased use of trucks has also made an additional demand, and many a passenger car has been made over into a truck and is now doing hauling.

The car owner now realizes that for some time the "before the war" price of cars will be just a memory of the past, and has taken the situation philosophically and is making the best bargain he can under the circumstances.

### MAKE IT A HABIT

to Buy

## War Savings Stamps

### Automotive Securities Quotations

	Bid	Asked		Bid	Asked
Ajax Rubber Co. ....	60½	62½	Maxwell Motor Co., Inc., 1st pfd.	58	59
J. I. Case T. M. Co., pfd.	78	83½	Maxwell Motor Co., Inc., 2nd pfd.	20½	21½
Chalmers Motor Co., com.	4	6	Miller Rubber Co., com.	106	108
Chalmers Motor Co., pfd.	20	30	Miller Rubber Co., pfd.	95	96
Chandler Motor Car Co.	87½	88½	Packard Motor Car Co., com.	118	125
Chevrolet Motor Co.	129	131	Packard Motor Car Co., pfd.	91	95
Fisher Body Corp., com.	36	37	Paige-Detroit Motor Car Co.	16	17
Fisher Body Corp., pfd.	84	87½	Peerless Truck & Motor Corp.	15	16
Fisk Rubber Co., com.	60	62	Portage Rubber Co.	105	109
Fisk Rubber Co., 1st pfd.	97	103	Reo Motor Car Co.	14½	15½
Fisk Rubber Co., 2nd pfd.	79	83	Saxon Motor Car Corp.	5½	5½
Firestone Tire & Rub. Co., com.	105	107	Springfield Body Corp., com.	..	..
Firestone Tire & Rub. Co., pfd.	94	96	Springfield Body Corp., pfd.	..	..
General Motors Co., com.	125	128½	Standard Motor Construction Co.	12½	13½
General Motors Co., pfd.	78½	78½	*Stewart-Warner Speed, Corp.	57	58
B. F. Goodrich Co., com.	46	46½	*Studebaker Corp., com.	46½	46½
B. F. Goodrich Co., pfd.	99½	101	*Studebaker Corp., pfd.	80	90
Goodyear Tire & Rub. Co., com.	152	155	Swinehart Tire & Rubber Co.	50	60
Goodyear Tire & Rub. Co., pfd.	98½	99½	United Motors Corp.	31½	31½
Grant Motor Car Corp.	2½	3	*U. S. Rubber Co., com.	62	63
Hupp Motor Car Corp., com.	3	3½	*U. S. Rubber Co., pfd.	103	104½
Hupp Motor Car Corp., pfd.	78	82	*White Motor Co.	46	46½
International Motor Co., com.	31	36	*Willys-Overland Co., com.	20	20½
International Motor Co., 1st pfd.	62	68	*Willys-Overland Co., pfd.	82	83
International Motor Co., 2nd pfd.	36	41	Standard Parts, com.	60	65
Kelly-Springfield Tire Co., com.	47	47½			
Kelly-Springfield T. Co., 1st pfd.	81½	87			
Lee Rubber & Tire Corp.	19½	20½			
Maxwell Motor Co., Inc., com.	26½	27			

\*At close, Sept. 7. Listed N. Y. Stock Exchange.

†Par value \$10.



## Train Mechanics for Duty at Army Posts

### Sweeney and Rahe Schools Instruct- ing Third Contingent—Teach Tractor Operation

KANSAS CITY, Sept. 9—The third contingent of motor mechanics being trained for army service at the Sweeney and Rahe schools, Kansas City, will complete the work during September and be assigned to various army posts. There are 4422 men now in Kansas City schools, 103 of which are negroes at the Western University, getting courses in carpentry, blacksmithing, concrete work; the rest are equally divided between the Rahe and Sweeney schools, and are receiving motor car, truck and tractor training.

Nearly all the motor squad men have had more or less experience with motor cars. About 50 per cent are former mechanics; the others have owned cars or worked on them. In the schools they receive about the same instruction as is given to civilian students, and the range of work is as varied as when the schools were entirely on civilian basis. The men are quickly placed in the departments where they can develop their highest capabilities—some being given training as truck drivers, others as mechanics, others as wiring experts.

The present contingent is providing a far larger number of tractor operators than any preceding squad. At both schools tractors are available, and instruction is given designed to prepare the men for operating the tanks on the battlefields. The huskier men are chosen for this department.

So far all the instructors have been those provided by the schools. Many of these instructors, however, of draft age have been inducted into the army but left in their positions.

The mechanics of the present contingent are an especially fine bunch apparently; only 43 were rejected on physical and other examinations out of the 4400. They came from Wisconsin and Ohio chiefly.

### London (Ont.) Dealers Organize

LONDON, ONTARIO, Sept. 5—Preliminary organization of motor car users was effected recently in London under the name Motor Users' Protective Association, and a committee was appointed to report on details of final organization at a second meeting.

### Hupp Surplus \$1,176,262.50

DETROIT, Sept. 5—Net profits of the Hupp Motor Car Corp. for the fiscal year ending June 30 were \$836,691.30. Surplus fund was \$1,176,262.50 compared with \$431,124.30 for the same period last year. Total assets were \$8,939,789.91. Current assets showed cash on hand of

\$731,165.70, accounts receivable less all doubtful accounts, \$762,877.94; bills receivable, \$12,764.35. Inventories based on cost totaled \$1,834,786.09, with securities, including Liberty bonds, aggregating \$173,860.36. The company had no outstanding bills payable. Accounts not due totaled \$749,645.52, tax reserve, \$279,971.28, and reserve customer deposits were \$215,910.61.

## MOTOR WORLD

### Drive-Away Bureau

#### Detroit to Indianapolis

DETROIT, Sept. 5—F. M. Leary, of the Sterling Motor Car Co., Paige distributor in Indianapolis, usually takes the following route going from Detroit to his home city:

Toledo, Findlay, Lima, Waupakaneta, St. Marys, Celina, Portland, Ind., Muncie, Anderson to Indianapolis—a distance of 200 miles. The route via Fort Wayne is 30 miles shorter but is impassable in wet weather.

Leaving at noon the drive-away can reach Lima (125 miles) by 7 p. m., where it stops for the night. A start is made the next morning at 7 a. m. and Indianapolis is reached that night at 6 o'clock. Seventy-five cents per car is the usual charge for storage at Lima, Fort Wayne and Bryan. Leary estimates the cost of taking his cars by drive-away at \$37.50 per car as against \$32.50 by freight.

#### Lansing to Columbus

COLUMBUS, Sept. 5—The route followed by the Capital Motor Car Co. in driving Reo cars from the plant in Lansing to Columbus follows:

Mason, Leslie, Jackson, Napoleon, Manchester, Clinton, Tecumseh, Blissfield, Ottaw Lake, Sylvania, Maumee, Perrysburg, Bowling Green, Findlay, Kenton, Marysville and Dublin. If the weather is very wet a detour is made from Napoleon to Brooklyn, Tipton and thence to Tecumseh.

The company advises the stone road out of Blissfield through Victorville, Berkey, Richland Center to Maumee. There is a speed trap between Mason and Leslie, according to the manager of the company, and care must be exercised in driving between these points. He also states that drivers should be careful between Perrysburg and Bowling Green.

The charges at the various garages along the route vary from 20 cents to 25 cents per quart for oil and 25 cents to 27 cents per gallon for gasoline. Fifty cents per car is the usual charge for storage. The drive-aways usually stop at night, either at Tecumseh (Barrett Hotel and Big Chief Garage) or at Bowling Green (Milliken Hotel and Petty's Garage).

The company reports that the drivers have always been well treated all the way through.

## Wisconsin Tractor Men to Hold Rally Sept. 13

### Acquaint Dealers and Owners with Service Plan—Who Makes Best Tractor Dealer?

MILWAUKEE, Sept. 9—The Wisconsin Power Farming Association, organized recently at Milwaukee by manufacturers and distributors of farm tractors and power farm machinery, will hold a "tractor rally" at the Republican House, Milwaukee, on Friday evening, Sept. 13, to acquaint dealers and owners of such equipment with its plans to guarantee every owner proper service after he has been sold. The meeting is held at this time to take advantage of the presence of many dealers and owners attending the Wisconsin State Fair, which closes on Saturday. During the fair the association is making an energetic campaign for new members among the thirty-six tractor manufacturers represented on the grounds.

A special meeting of the association was held Tuesday evening, Sept. 3, at the Hotel Medford, Milwaukee, to discuss the tractor rally, membership campaign, and service plan. A special committee is still working on the details of the service plan, which will be ready for presentation at the rally.

An interesting discussion of the relative merits of implement dealers and motor car men as tractor dealers arose. The trend of arguments was that the motor car dealer in many respects has a decided advantage over the implement man in not only promoting the sale of tractors, but giving service.

The fear was expressed, however, that motor car dealers may desire tractor sales rights mainly as a temporary measure to "fill in" during the time when passenger car production is at low ebb.

In justice to the motor car trade, however, it was stated that enterprising dealers would not sacrifice tractor rights as soon as the supply of cars was ample, if they have made a success of tractor business and developed into the profitable line it is bound to be for them.

While the feeling seemed to be that motor car men should be given every encouragement to engage in the tractor business, the warning was given that the implement dealers should by no means be neglected as a profitable outlet for tractors, and they should be shown every consideration, particularly in the direction of education to meet the strong competition which it was admitted will be forced upon them by the car and truck trade. This question is one of the most important before the members of the association and will be threshed out more fully at a subsequent meeting.

## War Savings Stamps

Don't Stop Buying Them

## N.A.D.A. NEWS

### *Dealers Ask for Help, Advice and Information— New Note Injected Into Correspondence of the Association*

ST. LOUIS, Sept. 6—There is a new note appearing in the correspondence of the N. A. D. A. These letters go to show that the writers have confidence in the association as a helpful quantity. Some of these letters ask advice and help, others supply information that will be helpful to the association, and others give advice. But mainly they show that the association is becoming an institution.

It may be added that all of these letters are answered and they are supplied with the best advice or suggestions that President Vesper and his staff can command. Here is one that very frankly states the problem that confronts thousands of dealers. Omitting the introduction it reads:

I live in a town of about 1000 inhabitants. For five years I was engaged in the automobile business in a small way. So about a year and a half ago I decided to go into it right, and borrowed about \$50,000 and put up a building 75 x 150, modern and fireproof, fitted it up with nice salesrooms and modern machinery for automobile repairing.

The building cost me about \$20,000. The remainder I used in buying automobiles and accessories, or in other words, to run the business with. For eight months, up to Jan. 1, 1918, I made enough clear profit to pay the Government an income tax of \$500.

Now this business would have been a failure if I could not have gotten all the automobiles I could sell, as the repair department, with the best of attention, would little more than break even, which is the history all over the country. This whole country is composed of Indians and cattle and mineral industries and absolutely no demand for trucks and tractors.

So you see if I should have to quit selling automobiles it would cut a large hole in the sales of parts, tires and accessories. As the repairshop does well to break even, it would rustle me to pay the interest on the investment in the building only. So the Government would derive little or nothing in the way of taxes, and I would not be able to pay for the number of Baby Bonds, etc., that I had signed for. You will find cases of this kind all over the country. Of course, you will understand that I am willing to go broke, if that is necessary, to help to win the war, which we must do. But on the other hand, I wish you would make it as plain as possible to the War Board that we must have some way to make money in order to pay taxes.

#### Holding on to Mechanics

A man writing from an eastern state sends a suggestion that may be helpful to others who fear to lose their mechanics through a classification as non-essential. His foreman was being questioned by a draft board. So the employer went into his books and he writes:

I found that this man had actually worked

1600 hours during the past year, which was billed out. We have 75 cars per month coming in for inspection, over which he has charge.

Out of the number of cars we have in our immediate territory, 67 were used for business exclusively, 27 for business and convenience, 78 for business, convenience and pleasure, and 60 for pleasure. A large number of the last mentioned are in the Red Cross and other war work, making a total of 232 cars.

We have in our shop 15 men employed under this superintendent. Of the number of automobiles classified as business cars are included a large number of physicians and hospital ambulances, also cars owned and operated by munitions plants. After we had submitted the above information to the proper board, they instructed our man to stay on his job.

#### How to Get War Work

Another eastern dealer is ready to quit and wants to find a way out. He writes:

In view of the fact that the Board is urging the automobile manufacturers to turn over their factories so that they will do nothing but war work, the thought occurred to me that they may have some committee or department that is looking after the securing of companies or buildings for making of war materials and wherever people have been obliged to practically discontinue, they will assist in the securing of business so that these people can keep their organizations together and thus do their part in the great conflict that is taking place on the other side.

The writer then describes salesrooms of 14,000 sq. ft. and a shop building of 26,000 sq. ft. that he would like to put to some use until the automobiles come back. He was advised to write to the War Industries Board, and his location is such that his troubles may soon be over, as are his prospects of going back into the motor car trade when he wants to.

The next letter, however, is the real prize. He sells a high-priced car in a southern city, and he fights like a German, just rushing in like the automobile manufacturers did. A part of his letter reads:

The writer has read over your Mr. Vesper's talk before the Ways and Means Committee in a pamphlet which you have sent out, and the writer regrets very much indeed the position of Mr. Vesper in this matter. In other words, instead of our Association putting up facts to prevent and hold down taxes, the writer finds that Mr. Vesper rather agrees to taxes now outstanding, to some additional proposed taxes, and even some suggestion of taxes coming from him.

Our opinion is that the Motor Car Dealers are probably as heavily taxed as any other line of business and why add more taxes? Why make it that much harder for people to own and operate an automobile? It is the

writer's opinion that it already is hard enough and everything that you put on it makes it that much harder.

Can't this Association of ours put up a good fist fight and show the National Congress that we want to do our part in every respect but we don't want to do also the other fellow's part.

Let us put up a fight something like the musical instrument people did more than a year ago. They kept the taxes off for more than a year, that we have been paying gladly. Instead of agreeing with everything, they don't agree to anything. And that would seem to us to be the policy our Association should put up because we are going to get taxes all right with the most bitter fight that we can put up in our opinion, and we hope that your Association will pursue this policy.

One can only wonder where he got his opinion that the musical instruments pay no tax and that that trade is doing so well. The difference was that the musical instrument folk took their medicine and said as little as possible about taxes and advanced prices, but their trade to-day is short of merchandise and the mortality among small dealers and credit givers has been even more heavy than that of the motor car trade.

#### Tractors at Iowa State Fair

DES MOINES, Sept. 6—Tractors were the big feature for the farmers at the sixty-fourth annual Iowa State fair which came to a close here Friday. Never has there been so much interest shown in automotive farm machinery as the Iowa farmers evidenced this year. There were a total of twenty-eight exhibitors of tractors, and of this number twenty-two were demonstrating on a big field within the fair grounds. It was the biggest outside show which the fair has ever had. Hundreds of dealers were in attendance, and many contracts for territory were closed. Passenger cars were given secondary consideration by Des Moines dealers who took part in the annual auto show at the fair. All dealers who handled trucks featured them, and are well satisfied with the results of the fair show.

#### New Western Continental Parts Distributor

KANSAS CITY, Sept. 6—Motor parts distribution is being simplified and centralized for Kansas City territory—and the entire central part of the United States—through the General Auto Parts Co., which opened a Continental Motor Parts Station at 1621 Grand Avenue recently. The officers of the General Auto Parts Co. are H. A. Dougherty, Republic truck distributor in this territory, president; Estel Scott, general manager of General Motors Truck Co., Kansas City, treasurer; R. L. Doyle, assistant manager of General Motors Truck Co., vice-president; L. A. Phillip, formerly service manager for the Oakland company at Kansas City, is manager of the new company.

Parts for 85 types of Continental motors are already stocked. Specifications and blueprints are also on file, through which when necessary Continental parts can be accurately substituted for parts of other manufacture not available in this territory.

## 50 Sales at Rochester Tractor Demonstration

### 650 Cars of Farmers See Nine Tractors at Work—Night Plowing Interests

ROCHESTER, Aug. 28—Nearly 4000 farmers of Monroe County attended the ninth tractor demonstration of the New York State Food Commission, held last week on the farm of J. L. Chase at Gates Center, with the co-operation of the Monroe County Farm Bureau and the Automobile Club of Rochester. By actual count there were 650 motor cars parked near the demonstration at one time, while but six horse drawn rigs were present.

As a result of the demonstration it is estimated that 50 tractors were sold, and at least one new tractor dealer added to the list in this vicinity, for George Henner, Monroe County agent for International trucks, signed a contract to handle the International tractor in the same territory before leaving the field. There are now three Rochester tractor dealers, the other two being Thomas J. Northway, state distributor for the Fordson, and Burr & Starkweather, implement men, who are agents for the Moline.

The tractor demonstration was held on the lines of the other demonstrations which have been held by the State Food Commission and had been extensively advertised by the Monroe County Farm Bureau and the Automobile Club of Rochester. Hundreds of farmers followed the machines along every inch of their course, making careful note of just what each machine accomplished.

Fourteen tractors were expected to be present, but failure of the railroads to deliver machines shipped as long as five days before the meet kept four from reaching their destination in time to take part. The tractors actually present, the fuel used, the make of plow attached, and the size of bottom were:

Make	Fuel	Plow	Bottom
Emerson	Ker.	Emerson	14-in.
Case	Ker.	G. Detour	14-in.
Maxim	Gas.	Oliver	14-in.
Frick	Ker.	Oliver	14-in.
Fordson	Ker.	Oliver	14-in.
International	Ker.	Oliver	14-in.
Moline Universal	Gas.	Moline	14-in.
Cleveland	Ker.	Oliver	14-in.
Huber	Gas.	P. & O.	14-in.

Farmers who were familiar with soil conditions in the locality declared that the field in which the demonstration was held presented a tough proposition from the ploughman's point of view, because of the extreme dryness of the soil. All sorts of different conditions were presented, including both sod and stubble, while one part of the field contained a considerable grade, which was so divided that each of the tractors faced the same conditions.

One interesting phase of the demonstration was the interest displayed by

the farmers in the possibilities of the use of the tractor at night, many inquiries being made as to the specific cost of the necessary lights. It was evident that many farmers were planning to purchase a tractor with which they would do custom work for their neighbors during the day-time, and were figuring on doing their own work at night.

### Fordsons at Ohio Fair

COLUMBUS, Sept. 6—One of the biggest attractions at the Ohio State Fair which closed after a very successful week, Aug. 31, was the exhibit of 55 Fordson tractors under the charge of E. H. Bryant, distributor for Ohio. The display was under the charge of A. P. Jones, field manager for the Bryant company. All of the 55 tractors were sold during the early part of the fair to farmers living in the immediate vicinity of Columbus.

Some of the novel features were tractors with electric lights for night use, tractors with camouflage, as used in the European war zone, some decorated with the colors of the American flag and some with all farm attachments. During the fair a small tract of land was plowed, harrowed and seeded to demonstrate their utility for fall work.

E. H. Bryant has been allotted 8000 tractors for the state of Ohio for the year ending July 1, 1919. Of that allotment 1822 have already been disposed of.

### Rockford Sees Some Tractors

ROCKFORD, ILL., Aug. 28—Special to Motor World—Rockford motor car dealers staged a tractor demonstration to-day on a 17-acre field west of this city, in connection with the annual farmers' picnic of this vicinity. The affair was non-competitive, each entrant merely demonstrating its plowing ability and staying qualities to some 2,500 farmers who attended. By working under the same conditions the farmers obtained an accurate idea as to what the tractor-plow combinations could do.

Before the plowing took place the tractor men exhibited their machines on the picnic grounds, having tents for booths, with a generous display of literature and racks showing photographs of their tractors in action. The Delco farm lighting plant was shown in operation and Emerson-Brantingham brought along one of its new motor-cultivators, besides showing its ensilage cutter in operation.

There was a good co-operative spirit among the dealers. The attitude of the dealers was that so long as they had come to show the farmers what tractors can do they would act as a unit in putting the tractor across, regardless of what the farmers thought of their outfits individually. Every dealer felt he had done much in the way of prospects and to carry this further, the Joslyn Auto Co., Rockford distributor of the Case and Grand Detour plows, circularized the whole gathering with literature, putting a folder in every one of the 1,400 odd

## Wilmington Trade Pushes Sales of Accessories

### Dealers Urge Need of Car Owners Stocking Up; Owners Respond —Results Good

WILMINGTON, Sept. 6—In view of curtailed production of passenger cars and a slowing down of trade dealers are pushing accessories and urging patrons to lay in duplicate necessities for their cars. The public sees the point and is acting accordingly, and as a result the accessory trade is greatly stimulated.

Users of cars are keen observers of conditions in the trade. They have noted every move. The curtailment of the production of passenger cars, following the original delivery troubles, first attracted attention; next it developed that rubber was likely to be at a premium, and along comes the Sunday motoring restriction to save gasoline.

So there is no telling when certain necessary accessories might get into the same category, and the car users are laying in such articles as they feel they can keep and use, thus placing them on safe ground.

Guy R. Ford, head of the Overland-Wilmington Co., is believed to have been the prime mover in the "accessory push" here. He started out by circularizing his patrons on tire "specials," and the result was wonderful. He advised his patrons to purchase "spares for present and future use," and they are doing so. In addition to getting good results from this, he has a good opportunity to play up other staples which he has to offer, and he commends this plan to other factory agencies. "Sell tires, oil and other accessories," he says, "also buy as many cars as you can get delivery of; push the sale of trucks that you can get when you may not be able to get passenger cars."

### Goodrich Managers' Conference

BOSTON, Sept. 6—All the heads of departments and the managers of the different branches of the B. F. Goodrich Rubber Co. were called to Boston last week for a conference on the tire situation, particularly as it affected the sale of pneumatics and truck lines. Fred T. Moore, in charge of the New England division, presided at the conference, and there was a general discussion on how the rubber situation was shaping up and what to do to meet arising conditions.

motor cars driven to the event. The same was done by one or two of the other dealers.

### Tractors at Rockford

Tractor	Fuel	Plow and size	No.
Boring	Gas.	E-B, 16	2
Case, 9-18	Ker.	Grand, 14	2
Emerson, 12-20	Ker.	Detour	
Brantingham		E-B, 14	3
Fordson, 22	Ker.	Oliver, 14	2
I. H. C., 10-20	Ker.	E-B, 14	3

## Specifications of the Leading Cars

**Revisions Are  
Made in Table  
Every Week**

Model	Motor	S. A. R.	Ignition	Carburetor	Starting	Clutch	Gearbox	Tires	Rims	2-Runner	3-Runner	4-Runner	Coupe	Sedan	Limousine	Deachable Top
ABBOTT	6-31x24 20.4 Remy		Remy	Stang	Stang	DD	3 122 34x4	SS		\$1875	\$1875	\$1875	\$2375			
ALLEN	4-31x26 23.6 Conn		A-Lite	Stang	A-Lite	D	3 112 32x31	SS		\$1145	\$1195	\$1260	\$1395			
AMERICAN	6-31x26 23.4 A.Kent		Zenith	West	West	DD	3 122 32x4	SS		1645	1695					
ANDERSON	6-31x24 25.3 Conn		Zenith	West	West	DD	3 120 32x4	SS		**1465			2165			
400-F	6-31x24 29.4 Bosch		Stang	West	West	DD	3 120 32x4	SS		**1925						
APPERSON	8-31x26 33.8 Remy		Johnson	Bijur	DP	3 120 34x4	SS			12880		2800	4250	4500		
8-18	8-31x26 33.8 Remy		Johnson	Bijur	DP	3 120 34x4	SS			12880		2800	4250	4500		
ANNIVERSARY	6-31x24 25.3 Remy		Rafid	U.S.L.	DD	4 132 34x4	QD			1445	1445			1695		
AUBURN	6-31x24 25.3 Remy		Rafid	U.S.L.	DD	4 132 34x4	QD			1445	1445			1695		
6-39-B	6-31x24 29.4 Delco		Rafid	U.S.L.	DD	4 132 34x4	QD			1785	1785		2550	2685		
6-44	6-31x24 29.4 Delco		Rafid	U.S.L.	DD	4 132 34x4	QD			1785	1785		2550	2685		
AUSTIN	12-31x26 39.6 Bosch		Stang	Delco	D	6 142 34x4	QD			3750	3750	4000	4550	5000	5250	
BE-KING	4-31x24 22.5 A.Kent		Zenith	Dyneto	D	3 114 31x4	QD			1150	1150					
BELL	4-31x24 22.5 A.Kent		Zenith	Dyneto	D	3 114 31x4	QD			1150	1150					
BIDDLE	4-31x24 22.5 Eisman		Zenith	G & D	DP	4 121 32x4	QD			2700		12750	4100	4000		
BUR-DAVIS	6-31x24 29.4 West.		*Stang	West.	DP	3 118 32x4	QD			1785						
183	4-31x24 22.5 West.		Rafid	West.	DP	3 118 32x4	QD			1680						
BREWSTER	4-4 25.5 25.6 Bosch		Zenith	U.S.L.	C	3 125 34x4	SS			7200	7700		8300	8400	8500	
BRESCOE	4-31x24 16.3 Conn		Buick	A-Lite	C	3 104 30x31	C			885	885					
B-24	4-31x24 18.2 Delco		Marvel	Delco	C	3 106 31x4	C			795	795					
B-34-35	6-31x24 27.3 Delco		Marvel	Delco	DP	3 118 34x4	SS			1265	1265		11685	1845		
B-44-45	6-31x24 27.3 Delco		Marvel	Delco	DP	3 118 34x4	SS			1265	1265		11685	1845		
E-49	6-31x24 27.3 Delco		Marvel	Delco	DP	3 118 34x4	SS			1495			2175			
CADILLAC	8-31x26 31.3 Delco		Own	Delco	D	3 125 35x5	SS			3220	12250	2250		4395		
87	8-31x26 31.3 Delco		Own	Delco	D	3 125 35x5	SS			3220	12250	2250		4395		
CLASE	6-31x24 29.4 Wetha		Rafid	Wetha	D	3 125 35x4	SS			1875	1875	1875	**2375			
U	6-31x24 25.3 Remy		Stang	Wetha	DP	3 112 32x4	SS			1565	1565	1615	1975	2250	2925	
CHALMERS	6-31x24 25.3 Remy		Stang	Wetha	DP	3 112 32x4	SS			1565	1565	1615	1975	2250	2925	
6-30	6-31x24 25.3 Remy		Stang	Wetha	DP	3 112 32x4	SS			1565	1565	1615	1975	2250	2925	
CHANDLER	6-31x26 29.4 Bosch		Rafid	Wetha	DP	3 123 34x4	SS			1795	1875	1795	2395	2495	3095	
CHEROULET	4-31x24 21.7 Remy		Zenith	A-Lite	C	3 102 30x31	C			715	735		1150	1185		
490	4-31x24 21.7 Remy		Zenith	A-Lite	C	3 106 32x4	SS			965	965		1475			
FA	4-31x24 21.7 Remy		Zenith	A-Lite	C	3 106 32x4	SS			1150	1385					
D	8-31x24 36.4 Remy		Zenith	A-Lite	C	3 120 34x4	SS			2595	12595	2595	3795	3595		
COLE	8-31x24 39.3 Delco		Stang		C	3 127 33x5	SS									
870	8-31x24 39.3 Delco		Stang		C	3 127 33x5	SS									
COLUMBIA	6-31x24 25.3 A.Kent		Stang	W Land	DP	3 115 32x4				11595	1550		2395			
CAED	6-31x24 25.3 A.Kent		Stang	W Land	DP	3 115 32x4				11595	1550		2395			
COMET	6-31x24 29.4 Delco		Miller	Dyneto	D	3 125 33x4						1865				
COMMONWEALTH	4-31x24 19.6 A.Kent		Carter	Dyneto	DD	3 115 32x31	SS			1995	1095					
CROW-ELKHART	4-31x24 19.6 Conn		Zenith	Dyneto	D	3 114 32x31	SS			1095	1155	1095		1435		
CE-36	4-31x24 19.6 Conn		Zenith	Dyneto	D	3 114 32x31	SS			1095	1155	1095		1435		
CUNNINGHAM	8-31x26 45.0 Delco		*Stang	West	D	3 122 35x5									6400	
87	8-31x26 45.0 Delco		*Stang	West	D	3 122 35x5									6400	
DANIELS	8-31x26 33.8 Wetha		Zenith	Wetha	D	3 127 34x4	QDR			3500	3500	3500				
DAVIS	6-31x24 25.3 Delco		Stang	Delco	C	3 119 34x4				1685	1685		2000			
H. I.	6-31x24 25.3 Delco		Stang	Delco	C	3 125 34x4				2000	2000					
J. I.	6-31x24 25.3 Delco		Stang	Delco	C	3 125 34x4				2000	2000					
DIETZ FLYER	4-31x26 16.9 Conn		Carter	Dyneto	D	3 112 32x31	SS			1095	1095			1375		
1936	4-31x26 16.9 Conn		Carter	Dyneto	D	3 112 32x31	SS			1095	1095			1375		



[illegible]

ABBREVIATIONS—"A. Kent" Atwater Kent, "A.-Lite" Auto-Lite, "B. & Ball" Ball & Ball, "Conn" Connecticut, "G & D" Gray & Davis, "Eiseman" Eisemann, "L.N." Leese-Neville, "N. E." North East, "Nemco" Newcomb, "O.M." Owen Magnetic, "Rafid" Rayfield, "Smbg" Stromberg, "Splid" Splittorf, "Tm" Tillotson, "W.L." Ward Leonard, "D" Disk, "DP" Dry Disk, "p" Plate, "R.D." Dry Plate, "C" Cone, "F" Friction, "G" Gearless, "CU" Control Unit, "Mag" Magnetic, "SS" Straight-side, "QD" Quick Detachable, "C" Clincher, "DC" Detachable Clincher, "V" Universal, "B & M" Robbins & Myer. NOTE—37½-55% means that the rear tires are 37½% and the front are smaller. Detachable top, 30x2, means \$300 extra. Reversible. "QDR" Quick Detachable.

## Colorado Building Return Loads System

(Continued from page 13)

to issue licenses to restrict the number of motor transport lines and regulate their operation, and extensive improvement of Colorado's system of highways.

Thus far favorable results are being accomplished by persuasion and advice. For example, the committee advised against starting a motor transport line where conditions do not look yet ready to insure a reasonable profit, or where a truck line already in operation is giving satisfactory service and has sufficient capacity to handle all the business at present. Such advice is based upon as complete information as the committee has been able to gather concerning a particular territory from a comprehensive system of questionnaires sent out to truck dealers, farmers and business men directly interested in shipping problems and in position to know the exact conditions existing in their own community.

Again, if a certain section has more truck lines than conditions justify, the committee seeks to get one or more lines to transfer to another section clearly needing such service and offering far better chances for a profitable business.

Every effort is being made to give every community needed transport service at reasonable rates, and also to give every truck operator a fair amount of dependable business at an equitable profit. The committee uses every practical method it can evolve against either unjustly high rates or rate cutting destined to injure the motor transport industry.

Likewise, taxpayers are being educated by the committee to see wherein good roads will increase motor truck service, make this new industry more stable under all weather conditions, lessen operating expenses and ultimately reduce shipping costs.

This program is counted upon to build up a substantial sentiment in favor of a state bond issue for extensive building and maintenance of permanent highways for year-round use, increasing the state's fees for motor car licenses and other proposed movements for increased road funds and increased road building to meet all regular and emergency demands.

With an area of nearly 104,000 square miles, equal to that of New York, Ohio, Connecticut and New Hampshire combined, vast stretches of mountainous territory and a widely scattered population totaling only about one-third that of Chicago, Colorado presents an exceptionally difficult problem in motor transport development.

But its transport committee is making progress winning federal commendation toward establishing all needed motor transport routes over the 42,000 miles of state and county highways. Colorado's length is greater than the distance from New York City to Portland, Me., while its width is about the distance from Chicago to St. Louis.

Good motor roads now cross Colorado mountain ranges two miles high, two

such roads being attractive links in transcontinental highways definitely aligned from the Atlantic to the Pacific—the National Midland Trail and the Pike's Peak Ocean-to-Ocean Highway. But many of these roads must be widened and otherwise improved to meet the motor transport demands of the state's expanding industries. Pioneer good roads workers began advocating extensive motor transport systems for Colorado long before the present world war, and they are now urging all the more zealously ample provision for this system of freight, express and passenger service—a substantial aid to the work of the Colorado Highways Transport Committee.

Distance	Time	Driver	Car	Track	Date
2	1:05.6	DePalma	Packard	Sheepshead Bay	Aug. 17
4	2:14.22	Chevrolet	Frontenac	Chicago Speedway	Sept. 3, 1917
6	3:21.1	DePalma	Packard	Chicago Speedway	Sept. 3, 1917
10	5:23.8	DePalma	Packard	Sheepshead Bay	Aug. 17
*10	5:07.6	DePalma	Packard	Sheepshead Bay	Aug. 24
15	8:18.9	DePalma	Packard	Chicago Speedway	Sept. 3, 1917
20	10:50.2	DePalma	Packard	Chicago Speedway	July 28
25	14:12.72	DePalma	Packard	Chicago Speedway	Sept. 3, 1917
50	26:57.03	Chevrolet	Frontenac	Sheepshead Bay	Sept. 22, 1917
75	42:40.28	Chevrolet	Frontenac	Chicago Speedway	Sept. 3, 1918
100	54:20.98	Chevrolet	Frontenac	Sheepshead Bay	Sept. 22, 1917

\*Non-competitive.

## New Records Allowed

NEW YORK CITY, Aug. 30—At a meeting held to-day by the Contest Board of the American Automobile Association, the following official records were allowed:

## DIRT TRACK RECORDS\*

Barney Oldfield in an Oldfield Special, Maxwellton 1-Mile Circular Track.	
1.....	45 sec.
2.....	1:30.4
3.....	2:17.6
4.....	3:05.6
5.....	3:53.6
10.....	7:56.2
15.....	12:00.8
20.....	15:52.2
25.....	19:57.6
50.....	40:47.6

## Coming Events

## Conventions

Cincinnati, O.....	District Convention, Ohio.....	Sept. 11
	Automobile Trade Association.....	
Syracuse, N. Y.....	Semi-annual meeting of the American Gear Mfrs. Assn.....	Sept. 19-21
Chicago, Ill.....	Convention.....	Oct. 28-Nov. 2
	National Association of Automobile Accessory Jobbers.....	

## Tractor Demonstrations

Greely, Weld Co., Col.....	Tractor show.....	Sept. 8-20
	Central Community Fair.....	
Milwaukee, Wis.....	State Fair, Wisconsin.....	Sept. 9-14
	Power Farming Assn.....	
Syracuse, N. Y.....	State Fair, J. Dan Ackerman, Secy.....	Sept. 9-14
Madison, Wis.....	State Fair, O. E. Remy, State Fair Secretary.....	Sept. 9-15
Canada.....	.....	Sept. 17-18-19
Riverhead, L. I.....	County Fair, Harry Lee, Secy.....	Sept. 17-20
Trenton, N. J.....	Trenton Fair, Harry B. Salter, Supt.....	Sept. 30-Oct. 4
Harrisburg, Pa.....	State Fair.....	Sept. 19-21
Washington, Ga.....	Wilkes County.....	Oct. 1-5

## Shows and State Fairs

Louisville, Ky.....	State Fair.....	Sept. 9-14
Topeka, Kan.....	State Fair.....	Sept. 9-14
Huron, S. D.....	State Fair.....	Sept. 9-14
Wyoming.....	State Fair.....	Sept. 9-14
Chicago, Ill.....	Automotive and Accessories.....	Sept. 14-21
	War Exposition, Municipal Pier, H. V. Buelow, Managing Director.....	
Springfield, Mass.....	Eastern State Exposition.....	Sept. 15-21
Leavenworth, Kan.....	State Fair.....	Sept. 16-21
Nashville, Tenn.....	State Fair.....	Sept. 16-21
Sioux City, Ia.....	Interstate Fair.....	Sept. 16-21
Billings, Mont.....	Midland Empire Fair.....	Sept. 16-21
Memphis, Tenn.....	Tri-State Fair.....	Sept. 21-26
Okla. City, Okla.....	State Fair.....	Sept. 21-28
Boise, Ida.....	State Fair.....	Sept. 21-25
Chattanooga, Tenn.....	Eastern Tennessee District Fair.....	Sept. 30-Oct. 5
Birmingham, Ala.....	State Fair.....	Oct. 1-12
Kansas City, Mo.....	American Royal.....	Oct. 7-12
Richmond, Va.....	State Fair.....	Oct. 7-14
Atlanta, Ga.....	Eastern State Fair & Automotive Exhibition.....	Oct. 12-19
Dallas, Tex.....	Seventh Annual Texas Automobile Show.....	Oct. 14-27
	Texas State Fair.....	
Macon, Ga.....	State Fair.....	Oct. 30-Nov. 9
Shreveport, La.....	State Fair.....	Oct. 28-Nov. 4

# MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

Volume LV1  
No. 12

PUBLISHED WEEKLY AT 239 WEST 39th STREET  
NEW YORK, SEPTEMBER 18, 1918

Fifteen cents a copy  
Two dollars a year

## Miller Uniform Mileage and Satisfied Customers

The dealer has no trouble in satisfying customers who buy Miller Uniform Tires. Miller tires bring satisfaction—ninety-nine in every hundred turned out at the Miller factories give better service than most guarantees.

Motorists have found in the Miller Uniform Tire the uniform mileage they have long been wanting. Miller tires wear alike because they are built alike. Every tire must measure up to the highest standard that high skilled labor and high quality material can produce.

More motorists are hearing of Miller Uniform tires every day because we are constantly advertising. And more motorists are learning daily that Miller tires—uniform in mileage under like conditions and “geared-to-the-road”—are the most satisfactory tires.

A phenomenal demand is made for Miller Uniform Tires, both cord and fabric. The dealer holding the Miller agency is benefiting by that demand. Miller products bring new business and hold it, because the customer is satisfied.

The Miller plan for dealers will interest you. Write at once for it.

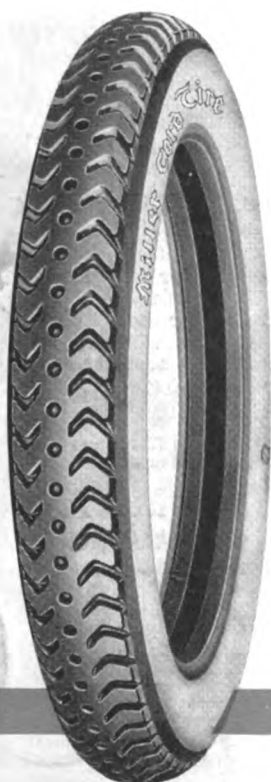
### The Miller Rubber Company

Dept. A-45

AKRON, O.

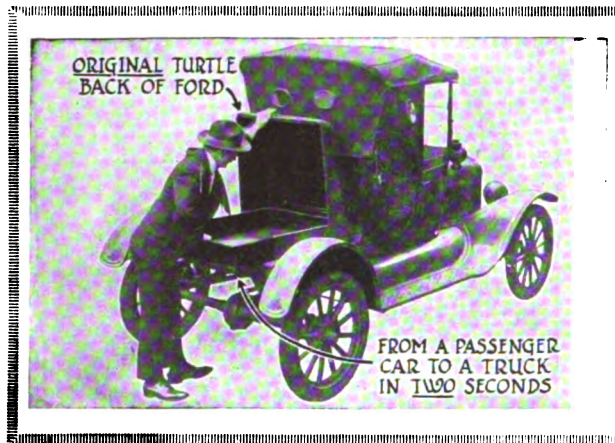
Makers of Miller Red and Gray  
Inner Tubes—The Team-Mates  
of Uniform Tires.

“Ninety-nine out of one  
hundred outrun their  
guarantee.”



# The Dealers' Problem Now Is to Sell Essential Lines

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THE dealers' field is gradually narrowing. Luxuries and non-useful products are meeting their doom one by one. So the far seeing, progressive dealers are now taking on useful lines of merchandise to keep their business close to normal.

## UTILITY DISAPPEARING TRUCK

*From a Ford Roadster to a Half-Ton Truck in 2 Seconds*

The Utility Disappearing Truck offers such unusual features of economy that business men everywhere are quick to see its possibilities and adopt it in their business. It is not a novelty. It is not an accessory. It is a real half ton truck that telescopes under the original turtle back of any Ford roadster. In two seconds (by actual experiment) the roadster is converted into a half-ton truck.

Price Only **\$38.50** Complete

### A STRONG, DURABLE HALF TON TRUCK

The truck is completely out of sight, telescoped under the original turtle back of the Ford. The car is not disfigured in any way—it looks just as it always did with no hints of the truck when it is not in use. The turtle back cannot be marred or injured. It lifts up and protects back of seat from scratches.

Can be completely installed by anyone with a hammer and wrench in one hour. Only four bolts used in attaching it. No rattle—no vibration. Will haul any load up to a half ton. Made of heavy gauge steel finished in black baked enamel to match finish of car. Can be pulled out to desired length. No bolts or rivets used in its construction. It is acetylene welded throughout.

Makes a Ford the most useful car on the market.

**DEALERS!**

Here is an extremely USEFUL PRODUCT that you should be handling. Ask your jobber to supply you

**HILL PUMP VALVE COMPANY**

Archer Avenue and Canal Street

CHICAGO, U. S. A.

Sales Department: THE ZINKE COMPANY, 1323 S. Michigan Avenue, CHICAGO

#### UTILITY Sure-Grip Pedals for Fords

Absolutely prevent foot slipping from clutch or brake pedal. **UTILITY** Sure-Grip pedals transform the small, smooth Ford pedals into standard size, safe, comfortable pedals. Attached instantly—no holes to drill, no special tools required—one nut to tighten and the job is done. Once they are installed they absolutely cannot slip off.



\$1.25 per pair.

DEALERS—Order a sample pair.





# MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

PUBLISHED EVERY WEDNESDAY BY

The Class Journal Co.

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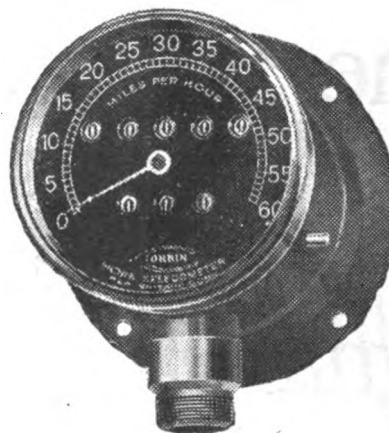
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Read Pages 8, 9 and 10 .....	
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## Designed Especially For Your Ford



Owing to their lightness and the hard service to which they are usually subjected Ford cars put severe strains on a speedometer. That's why it is important, in order to obtain accuracy and durability, that you equip your Ford with the high-quality

## CORBIN-BROWN SPEEDOMETER

The Corbin-Brown is made in special types for Fords. It can be supplied with complete, beautifully-polished cowl board and nickel-plated instrument, or with a neat, easily-attached bracket for fastening to the dash.

Corbin-Brown Ford models have all the excellent qualities of the Corbin-Brown speedometers for larger cars. They are featured throughout by simplicity and great strength.

Drive gears and shaft are in one piece for ruggedness and accuracy. The gears are large and carefully hardened. They are held in correct position by a big, strong collar which insures perfect meshing. Another valuable feature is the link cable, sturdy and almost frictionless. The instrument itself has few parts and durable ones. The whole Corbin-Brown equipment is built for long, reliable service.

Write for Catalog Showing Ford Special Models with Original Corbin-Brown Features.

## CORBIN SCREW CORPORATION

[American Hardware Corporation, Successor]

NEW BRITAIN, CONN.

Branches: New York Chicago Philadelphia

# The Green Signal

War materials are the only shipments that have the right of way on the railroads—others must wait their turn.

Bethlehem Internal Gear Drive Motor Trucks have the green signal on all roads. There are no waits—no delays—they stand up and deliver.

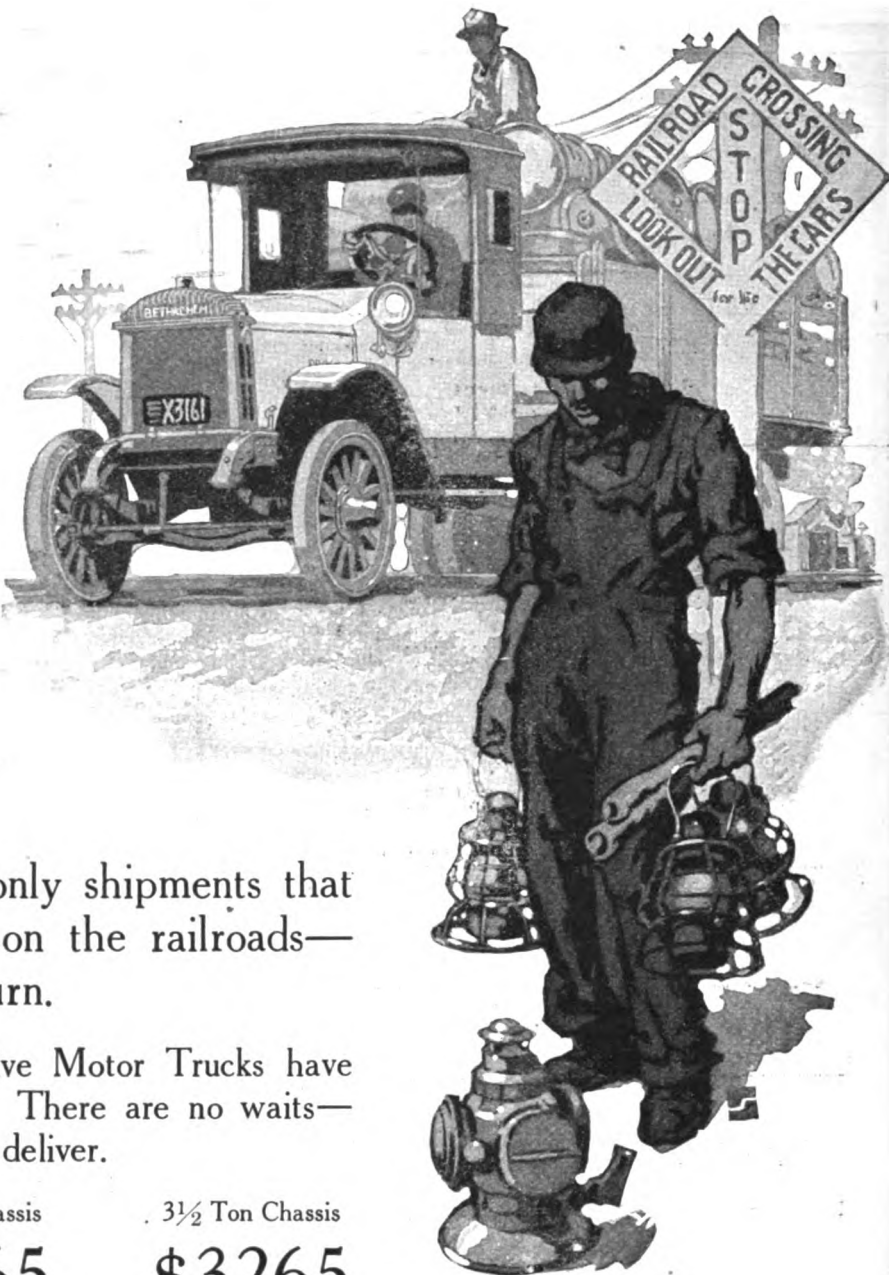
1½ Ton Chassis	2½ Ton Chassis	3½ Ton Chassis
<b>\$1765</b>	<b>\$2165</b>	<b>\$3265</b>

F. O. B. ALLENTOWN

Gray and Davis Electric Starting and Lighting is standard on all models.

*Take everyone's advice and examine a Bethlehem.*

*Is your territory closed—wire us and find out!*



The Motor  
Truck bought  
to-day without  
Electric Starting  
and Lighting  
will be out-  
of date  
to-morrow

**BETHLEHEM**  
*Internal Gear Drive*  
**MOTOR★TRUCKS**  
*Dependable Delivery*  
BETHLEHEM MOTORS CORP'N. ALLENTOWN, PA.

The Motor  
Truck bought  
to-day without  
Electric Starting  
and Lighting  
will be out-  
of date  
to-morrow

When writing advertisers please mention Motor World—it identifies you



## More Than \$100,000 to Make 25,000 Calls

**S**OME manufacturers who depend, or have in the past depended, upon traveling salesmen to visit their trade at regular intervals, estimate that one man will make 40 effective calls during a single week—average territory considered.

Salary and expenses for that week, let us say, total \$200. That means the cost to the manufacturer is \$5. per call.

How long would it take a force of 50 or even 100 traveling salesmen to call upon 25,000 dealers, jobbers and garagemen—and get serious attention from the heads of all firms, their salesmen, and their service men?

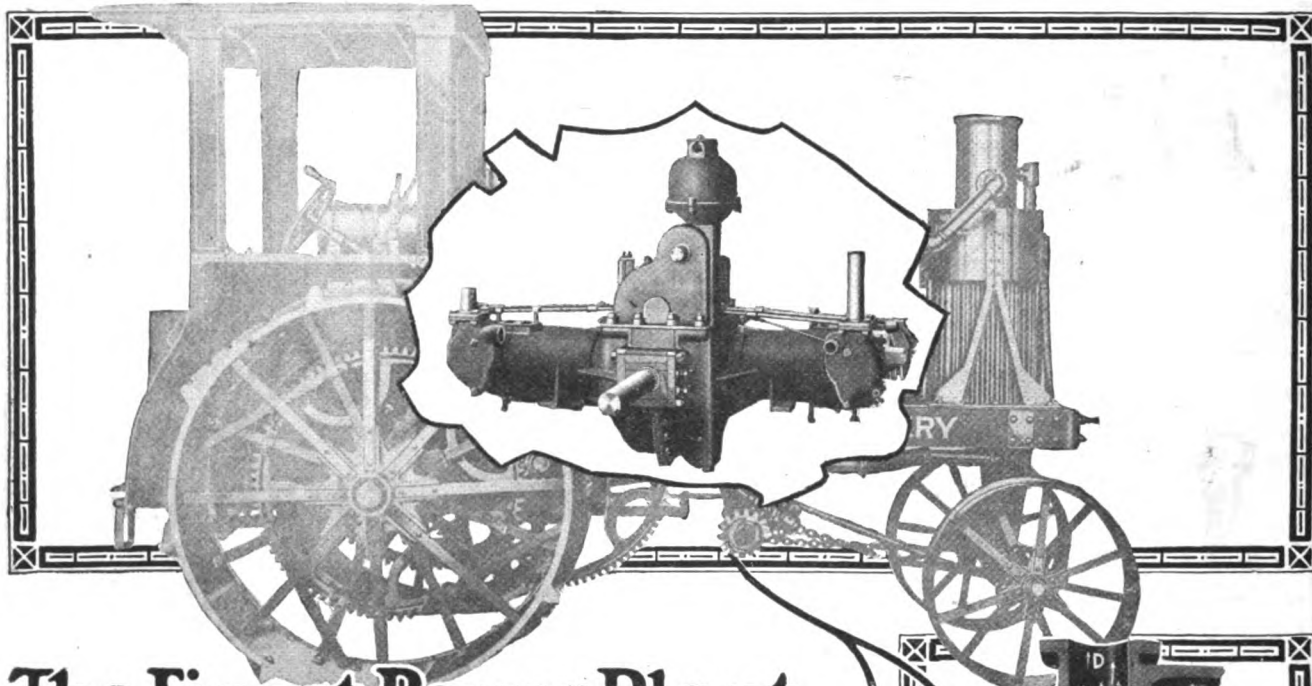
And how about the expense? It would total upwards of \$125,000.

Some manufacturers have a merchandise message that should go to you every week. Surely they cannot personally call upon you and the other thousands and deliver that message effectively.

Nevertheless, you *can* get their message, and you *do* get their message via **MOTOR WORLD**. The expense is relatively small—inconsequential by comparison. But its effectiveness is undoubted because you, and other important individuals and firms in the trade, depend upon this paper to render you that very character of service throughout the entire year.

Isn't it true, then, that the manufacturer who has a message that relates to merchandise, merchandising, or maintenance, and who uses **MOTOR WORLD** as his vehicle of transmission, is able to obtain effective results at an astonishing small cost?

# Power for Field Work-Power for Belt Work



## The Finest Power Plant On Wheels

**T**HAT is what one of the many satisfied Avery Tractor owners said about his Avery Tractor Motor. And he was certainly right. Avery Tractor Motors are different from other types of tractor motors. They are not the stationary gas-engine type, built for belt work alone. Neither are they of the high-speed automobile type.

Avery Motors are special tractor motors designed for belt work and traction work. They are low-speed opposed motors, with renewable inner cylinder walls—are valve-in-head. They have gasifiers that turn kerosene into gas. They have adjustable main crankshaft bearings. Extra strong crankshafts.

### No Other Line of Motor Farming Machinery Has So Many Exclusive Sales Arguments

Having the sale of the Avery Line gives you the edge on every other dealer in your neighborhood. You get the sale of six sizes of Avery Tractors, including the smallest and lowest-priced tractor built. You get the sale of the Avery Motor Cultivator, which plants and cultivates any row crop. You also get the sale of a complete line of Avery tractor plows and threshers. The Avery Company are Motor Farming Specialists. They are designers and builders—not assemblers.

### One Avery Sells Another

When you sell an Avery tractor, its work in the hands of owners will help you sell more Averages in the same neighborhood. Sell Avery tractors—the tractors that work for you as well as your customers.

The Avery line of Motor Farming Machinery is backed up by a big national farm-paper advertising campaign that reaches practically every farmer in your territory. One Avery dealer said, "Because of the splendid Avery advertising, an Avery Tractor is almost half sold before I meet my prospect." It will pay you to find out at once about the Avery 1919 sales proposition. Write our home office or any of our branch houses.

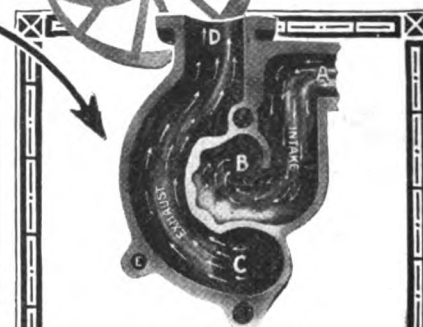
### AVERY COMPANY, Factory and Main Office, Peoria, Ill.

Branch Houses: Madison, Fargo, Omaha, Minneapolis, Grand Forks, Sioux Falls, Aberdeen, Billings, Lincoln, Des Moines, Indianapolis, Kansas City, Wichita

Jobbers: AVERY COMPANY OF TEXAS, Dallas, Amarillo and Beaumont, Texas  
Also other principal machinery centers

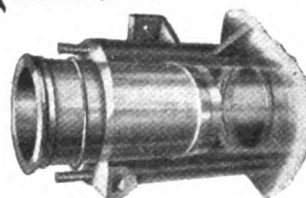
# AVERY

Motor Farming, Threshing  
and Road Building Machinery



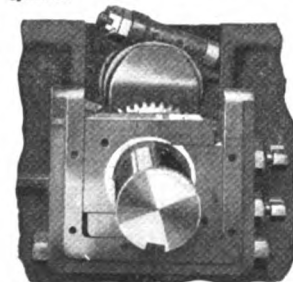
**Avery Gasifier**

On each cylinder-head of an Avery Tractor there is one of these Duplex Gasifiers. The corrugated wall between the intake and exhaust is heated by the exhaust gases. Any particles of fuel that are not fully vaporized are thrown by centrifugal action against the heated inner wall of the gasifier and vaporized. Only a completely vaporized mixture enters the cylinders.



**Renewable Inner Cylinder Wall**

Tell your customer he can pull out and replace this inner cylinder wall when it becomes worn or scored from any cause. He doesn't have to buy a complete new cylinder.



**Adjustable Crankshaft Box**  
Just put a wrench on the cap-screws—that's all. This is another of the improved features you can offer only in an Avery Tractor.



# MOTOR WORLD

for  
DEALERS, JOBBERS AND GARAGEMEN

Vol. LVI

New York, U. S. A., Wednesday, September 18, 1918

No. 12



# WE BOUGHT And Our Soldier

---

*NOW THAT WE LIKE IT*

---

**S**OME months ago we were asked to buy Liberty Bonds.  
What for?

**To help win the war.**

A second time we were asked to buy bonds.

What for?

**To help win the war.**

A third time we were asked to buy bonds.

What for?

**To help win the war.**

And now we are asked to buy bonds a fourth time.

What for?

**To push the American army farther on its way toward Germany.**

The first, second and third times we bought bonds we didn't have a very definite idea what for. But now we **KNOW**. We have seen the results of our bond buying.

---

Until now the whole thing has been comparatively indefinite. We knew our money was being used for our war machine and that it cost money to equip an army, but to-day we can see that little old army making the Germans so sick of the word "war" that they are all crying about "peace."

Let's give them an answer to their "peace" talk. Let's tell them the only peace they'll get will be one that is written in the Yankee language on a German table in Berlin. And let's keep that little old army right on its way—by **buying more bonds.**

Some of us thought Liberty Bonds were a burden. We thought we were paying for a

show without knowing whether the show was worth it. But to-day we are seeing the show and we want to see the rest of it. So let's pay for the rest of it, and **the better we pay the sooner the show will end.**

By this time we have discovered that buying Liberty Bonds is not a burden. We have found that we can pay for them easily. It took some little time for some of us to adjust our living and spending to the new scheme of things, but we soon found that we could buy bonds and live on just about as we had in days gone by.

We also found that the bonds are something to be desired. After we got our first bond and

# LIBERTY BONDS

## Boys Made Us Like It

---

### *LET'S DO IT AGAIN*

---

clipped our first coupon we felt different. We had a feeling such as never came from a mere savings bank account. And when we got the second and third loan bonds we acquired still more of that feeling of independence and responsibility.

If we were business men and were used to owning bonds we became better Americans as our bond holdings grew.

**And now that we have all become coupon clippers and find that we like the job let's keep right on with it.**

Furthermore, we weren't sure we were going to like bond buying. A principal reason was that bonds were only pieces of paper, printed in fine colors. **But now we can see what we bought.** We know now that the fine sharp bayonets that are being poked into the Germans along the American front were bought with some of our money.

And aren't we somewhat surprised to see the way the boys are using the guns we bought them?

Of course, we knew the boys would give a good account of themselves, but who ever supposed the Marines would start the show at Chateau Thierry so early and start the Germans on the run so fast? **Gee! aren't you glad you bought a bond?**

And if you didn't buy a bond have you the heart not to buy one now? Can you look in the looking glass at a person who isn't ready to pay for the show he is enjoying?

In the street and in our homes men, women and children applaud the soldier boys who are showing the Germans what an American can

do when he gets his fighting blood up. But all these hurrahs don't keep the fight going. What must be had is real financial support. **There must be more bonds bought.**

We have bought guns for the boys and shipped them to France, but their bullets will get low.

And there are several million more men to be shipped to France.

And all of this will cost money.

**But just see what a glorious feeling it is to know that it is OUR money and YOUR money that is making the Hun take back all the insults he has thrown in the face of civilization.**

They thought we couldn't fight, did they?

We'll show 'em.

Won't we?

Attaboy!

## And Now

**THIS** means that the dealers in every city must organize for the Fourth Liberty Loan.

They must form a loan committee with a fast-working head.

There must be sub-committees.

There must be heads in every business organization to care for the sales of bonds in that organization.

And in every business organization there must be committees.

The whole thing must be organized in detail from the top down, and no stone must be left

untuned to make this latest and biggest Liberty Loan go over whooping.

We've got to do it.

The whole world is watching. Let's give 'em something to look at.

Already the New York city dealers are getting in line. They have started their campaign and will go into the big push September 28 with enthusiasm. The New York loan organization is known as the Rainbow Division, and plans already formulated indicate that the Automotive Liberty Loan Committee of the Rainbow Division is going to do its utmost to make the next Liberty Loan drive go "over the top."

The committee met at the Automobile Club of America last Thursday and outlined a general plan of action. Each day of the campaign, which begins on September 28, will be filled with features in which the various automobile dealers along automobile row will take a very active part.

At the meeting were Charles M. Brown, chairman of the committee and president of the dealers' association; Charles E. Miller, vice-chairman; Charles A. Stewart, secretary of the dealers' association; Elmer Thompson, secretary of the Automobile Club of America;

Mr. Holden of the National City Bank, the committee's financial director; E. S. Partridge, director of entertainment; Carl H. Page, director of sales; Augustus Post, representing President Alan R. Hawley of the Aero Club; E. F. Korbel, publicity manager; John C. Wetmore, director of orators; R. M. Owen, A. G. Southworth, William Allen and Walter A. Woods, who are on the Automotive Liberty Loan Committee.

The campaign will begin with a big automotive night at the Automobile Club of America. It is planned to make this a memorable night in the history of automobile row, and features of unusual interest, such as motion pictures taken at the front depicting the activity of aircraft and motors, will be shown, while interesting speakers and entertainers will be included in the program. October 5 will be known as motor club night, when a smoker and dinner will be held at the Automobile Club of America. President Poertner of the Motor Club is planning some very unusual features for this affair.

Each day of the Liberty Loan drive on automobile row will be distinctive in form and the various dealers are to be asked to turn over their salesrooms to help in the big drive.

## *MOTOR WORLD'S ANNUAL*

# Winter Business Number

*Will be published October 16*

It will tell you about how to meet the trying conditions of the period through which we are passing now.

It will contain ideas and suggestions that may mean thousands of dollars to dealers and garagemen.

It may furnish just the suggestion you have been looking for as to how to get from under a big load about to fall upon you.

It may be the means of saving your business from failure.

## You Will Be Interested, But—

While you may be interested, you can also be of help to others. Have you an idea that will help the other men in the trade? If so let's have it. This is a time when every man wants every other man's ideas. MOTOR WORLD representatives in many cities are now gathering ideas and learning of the solutions of problems, but they can't see all the 30,000 dealers in the United States. Therefore, let's have that idea you have uncovered through the force of necessity.

**Send It NOW**



# HAVE YOU JOINED THE National Automobile Dealers' Association?

---

It is doing a big work for every dealer, and every dealer should get behind it and give his support, both moral and financial. Important things must be done in the future. The association must be made bigger and stronger than ever. It needs YOUR help. Can you afford to let other dealers pay for the protection the N. A. D. A. gives YOUR business? Let's all stand together!

---

A TRIP through the South and West is being planned by President F. W. A. Vesper and Executive Secretary E. E. Peake of the National Automobile Dealers' Association in order to acquaint dealers in those sections with what the organization is doing and to enlist the full support of the trade there. These sections have already got strongly behind the N. A. D. A. and are anxious that the association's two leaders address them.

Memberships are coming in from all sections of the country in the campaign which has now been under way for several weeks. Wherever meetings are held the response is gratifying.

In Milwaukee, as told elsewhere, the Wisconsin dealers last week lined up in support of the movement and cheered Vesper and Peake when they told what the organization has done.

Within the next few days important matters will be taken up at Washington and the results made known as soon as certain details are settled.

Part of the campaign has been an every-member-get-a-member stunt, and the results have been good. Some members have sent in many more than the one member asked. Despite the summer weather in which the campaign has been conducted the results have been in excess of expectations.

## Wisconsin Organizes for the N. A. D. A.

MILWAUKEE, Sept. 14—A Wisconsin branch of the National Automobile Dealers' Association was organized on a temporary basis at a meeting of state dealers which followed a luncheon tendered by the Milwaukee Automobile Dealers' Association at the Milwaukee Athletic Club Wednesday noon, Sept. 11.

Another meeting will be held in about a month, at which a permanent organization will be effected. Officers will be elected at that time. In the meantime an organization committee consisting of one representative dealer from each of the seventy-one counties in Wisconsin will do local promotion work and conduct a membership campaign.

The Milwaukee association, which took a leading part in the formation of the National association, selected state fair week as the best time to get the dealers and garagemen of the state together for its annual fall show, as the state fair attracts an unusually representative attendance of tradesmen. Its invitation, extended to approximately 1700 dealers, received a hearty response, the dinner being attended by more than 300, of whom nearly 100 already were members of the National association. Almost

every one of the remaining 200 signed a membership application.

F. W. A. Vesper, president, and E. E. Peake, executive secretary of the National association, were the guests of honor. It was the result of their enthusiastic endeavor along the lines of organization that there was practically a 100 per cent response to the call for members. Effective work also was done by Bart J. Ruddle, national secretary, who is manager of the Milwaukee association.

President Vesper evoked enthusiasm when he described the developments in the situation with respect to the curtailment of passenger car production, and the manner in which the National association came to the rescue and saved the day at a time when it appeared that the passenger car industry was being shaken to the very foundation. It was owing to the determined effort and straightforward work of the dealers' organization, he said, that consequences of the gravest nature were avoided and a virtual calamity was obviated.

"Get behind our Government and show your appreciation of its consideration by observing the war conservation rules to

the letter," urged Vesper. "Get your house in order to meet any condition that this great emergency may develop. The production of passenger cars will come to a practical standstill on Jan. 1, but conditions may change for the better over night. Dealers who have not already done so should take on other lines to help keep their organizations intact and maintain their business until the glorious day when peace comes and the world readjusts itself to what we have known as normal conditions."

He pointed out the motor truck, the tractor, the trailer, the farm lighting system and other commodities which the dealer should seek to round out his line. These, he said, furnished the best possible means of operating on a war basis with the least possible expense for readjustment from the peace-time basis.

Vesper's recital of his personal experience respecting the Liberty motor and the remarkable accomplishment of American inventive genius in giving it birth, created tremendous interest, and the applause was exceeded only when he declared that America is not going to win the war, but is winning it now.

(Continued on page 33)

# Trucks Are Being Sold by Dealers Who Boost the Rural Motor Express

**T**HE idea is taking hold rapidly and is doing the country a lot of good. It is bringing the country and city closer together and is saving food that would otherwise go to waste. It is saving time for the farmer. It is war-time efficiency that will last after the war is over and prove the opening of a great truck market for those dealers who get in early and get in touch with the work.

**S**INCE the National Motor Truck Committee began its campaign to spread the Rural Motor Express idea two months ago, 150 trucks have been sold in this work by dealers. The Committee has knowledge of this many and there doubtless are many others it has not learned of.

This Committee, at 7 East Forty-second Street, New York, managed by Samuel A. Miles and F. W. Fenn, is distributing literature which it wants dealers and other interested people to write for. The Committee has booklets telling what the Rural Motor Express is, what it does for the farmer, what it does for the dealer, how dealers may investigate and plan routes, establish rates and get things in motion. Dealers by hundreds are getting this literature and following the plans outlined.

The result is that trucks are being sold, the truck business is being stimulated, the idea is getting a firm foothold—which means permanent benefits to the farmer, city man and dealer.

The Rural Motor Express is a

motorized stage line. It runs from the city, out through a section of country and back the same day, carrying goods from the city to the farmers along the way and bringing the farmer's produce back to the city.

Every day the National Motor Truck Committee receives reports of the growing activities of the movement from all sections. Here follow some of the recent developments:

The following was received from F. Eaton, manager, Oakland Distributing Co., Inc., Buffalo, N. Y.: "Replying to your communication in regard to securing for you a list of suburban truck delivery service in Buffalo and vicinity we name the following, giving approximately the number of trucks in use by each one:

Continental Cartage Co.....	5
Erie Service Co.....	20
Buffalo-Tonawanda Delivery.....	4
Carpenter Bros., Tonawanda, N. Y.....	3
Buffalo-Akron Transit Co.....	2
Williamsville-Buffalo Delivery.....	2
Eastern States Transportation Lines.....	20
Buffalo-Lancaster Delivery.....	2
Buffalo-Alden Delivery.....	2
East Aurora-Buffalo Delivery.....	4
Baker's Passenger Service, Hamburg, N. Y.....	2
Niagara Falls Delivery.....	2
John Shutt, Grand Island, N. Y.....	1
Alvin Long, Grand Island, N. Y.....	1
William Kast, Hamburg, N. Y.....	1
Frank Heath, North Collins, N. Y.....	3
Frank North, North Collins, N. Y.....	1
William Lakeley, Eden Center, N. Y.....	1
John Glass, Angola, N. Y.....	1
Harry Dye, Hamburg-Boston Delivery.....	1
Total.....	78

"Some of these were in service before this spring, but it is my understanding that they have added to the service since that time. I am not in position to give you the exact data in regard to that data."

O. F. Berkey, manager of the Oakland Motor Car Co. of Chicago, writes: "Walter S. Van Duyn, of Springfield, will put two Oakland heavy duty trucks in service between Springfield and Auburn in the very near future."

W. H. Head, manager of the Oakland Motor Car Co. of Omaha, writes: "There have been several freighting lines started out of Omaha, and so far they seem to have been quite successful. In fact, the Oakland dealer at Persia, Iowa, is running a line of two trucks between Omaha and Persia, and in talking with him a few days ago he said it was very successful. He was able to give the merchants better service than they were getting from the railroad companies. Not only this, but it relieved the railroad companies to some extent. This is only one of the several that have been started."

The branch manager of the Oakland Motor Car Co. of Indianapolis writes: "The country roads in Indiana, leading to and from Indianapolis, are covered daily with truck trains carrying all kinds of cereals and live stock, merchandise and milk. The Rural Motor Express has a good start."



This fleet of trucks operates out of Mason City Iowa, through Nora Springs and Osage to St. Angar. The fleet has proved profitable and has been of great service to the merchants in these towns and to the farmers and business men along the route. It means that some dealer sold four trucks and has a fine chance of selling some more



A  $\frac{1}{4}$ -ton I. H. C. express truck and a  $1\frac{1}{2}$ -ton I. H. C. freight truck on the route between Albert Lea, Minn., and Mason City, Iowa, a distance of 42 miles. The trip, which was made during a rainstorm, over new dirt roads, took 6 hours and 40 minutes. Two thousand two hundred pounds were carried on the  $\frac{1}{4}$ -ton truck and 3800 pounds on the  $1\frac{1}{2}$ -ton truck. The expense of the round trip for both trucks was \$24.80. The same loads by freight, both ways, would have cost \$41.40. All overhead, depreciation, interest, etc., were charged against the trucks

"The mail service has just been started and has been found to be very satisfactory by the Government.

"The railroads running in and out of our city are getting very little local merchandise business, due to the truck trains taking so many shipments direct from the producer."

Charles N. Knowles, Jr., field agent, Highways Transport Committee, Colorado State Council of Defense, writes: "There is a Rural Motor Express truck operating in Colorado, between Denver and Morrison and Denver and Evergreen. The trucks bring milk and other produce into Denver and take back supplies needed by the farmers and merchants at intermediate points and towns. The man in charge of the work is operating three Denby trucks of 1, 2 and 3-ton units respectively. The business, which was slack at first, has developed so rapidly that the owner of the trucks is con-

templating putting additional ones in operation.

"The country through which these trucks operate is more or less mountainous, but the roads are fair, and except in very inclement weather they can operate on regular schedules.

"The above-mentioned Rural Express has proven a success, and indications are that it will continue so.

"There are several other truck lines operating out of Denver in different directions, which perform a similar service to those herein mentioned. It has been impossible to get data from them, however, as the owners are either indifferent or too busy to get up the data sought—in fact, it was quite a task to get the meager information herein contained, but we believe it will serve your purpose as it is indicative of the Rural Motor Express idea as it has so far developed."

A special meeting of the Motor Truck Service Committee was held in St. Louis Aug. 23. Those in attendance were: G. H. Ogletree, Ogletree-Johnson Delivery Co.; H. G. Ranch, St. Charles Electric Express Co.; W. E. Rehbein, Garford Motor Truck Co.; C. E. Lightfoot, General Motor Truck Co.; J. J. Wasdock, Team and Truck Owners' Association; Frank W. Gunn, Gunn Transfer Co.; J. R. Brashear, Brashear Truck Service Co.; M. A. Hecht, Progressive Transfer Co., and H. S. Hammett, Missouri Motor Transp. Co.

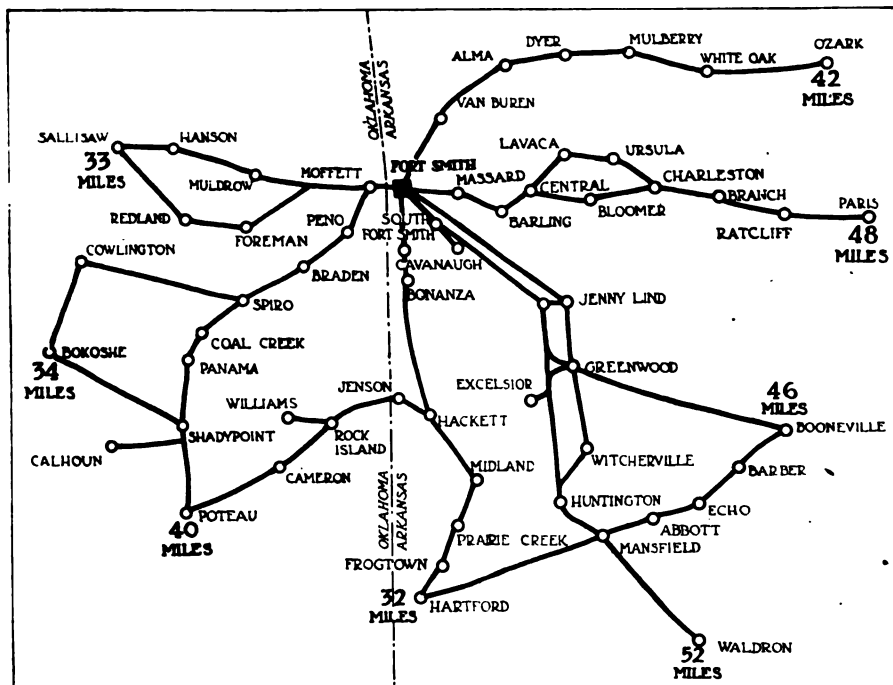
They have reported the following to the National Motor Truck Committee:

"Brashear Truck Service Co.—In and around St. Louis; 150 to 175 tons per day; making a daily run to Belleville, Ill., and return; 30 tons; total trucks in use, fourteen to sixteen; roads good.

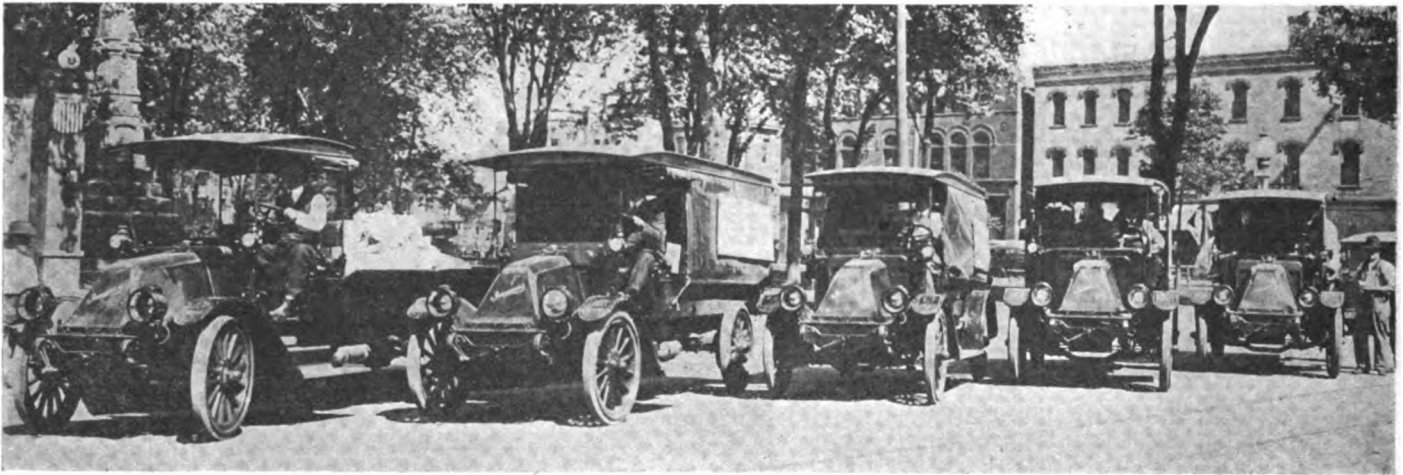
"Gunn Transfer Co.—St. Louis to Madison, Venice and Granite City; 20,000 lb. per day; 15 trucks; roads O. K.

"Ogletree & Johnson Delivery Co.—Daily service to Granite City, Madison and Venice; about 30,000 lb. per day, round trip; Ogletree advised he has a proposition on foot whereby the carriers can be relieved of practically 70 cars per month between St. Louis and Alton, Ill. Tonnage would amount to about one million and a half pounds; however, there is a stretch of road of about twelve miles between Nameoki and Alton that is in very bad shape, and it will be practically impossible to operate during the winter time on account of the condition of these roads. Practically 60 per cent of the inbound tonnage will be Government material and the outbound from St. Louis will be foodstuffs and material used by industries doing Government work.

"Missouri Motor Transportation Co.—Operates to St. Charles, St. Peter and O'Fallon, and a few trips to Winsfield, Mo. About 20,000 lb. per day round trip tonnage. Roads the other side of St. Charles are in very bad condition, and especially a strip of road five to eight miles from St. Charles to St. Peters. Before operation can be continued this winter to any great extent this road will have to be put in shape. If the roads



Out of Fort Smith, Ark., several lines are in operation. They tap a productive territory, and mean that dealers are selling trucks. The express customers, expressmen and dealers all share in the benefits



*The fleet of five I. H. C. trucks loaded for a trip to Lake Mills, carrying merchandise and express. They carried 21,000 pounds, making the round trip, 92 miles, in 9 hours and 40 minutes, at a total cost of \$46.35. This included gas, oil, tires, repairs, interest, depreciation, drivers, garage, insurance and license*

were put in good condition, Hammett stated, he could increase his tonnage to one million pounds per month between St. Louis and Wentzville and intermediate cities.

"Mr. Hecht, of the Progressive Transfer Co., was not prepared to give any statistics on the tonnage they were handling, but will forward to us at a later date.

#### To Request Fixing of Roads

"It was agreed that a copy of the statistics would be furnished Mr. Lightfoot so they could be forwarded to the National Motor Truck Committee, and that the Traffic Commissioner would request co-operation of the Alton Board of Trade and the St. Charles Chamber of Commerce in pointing out to the Government the release of such a large number of freight cars by repairing the roads in these districts, as well as the benefits that the Government would derive in the prosecution of the war, in moving materials promptly from and to industries engaged in war work in the vicinity of Alton, Ill."

Troy Adams, of the Adams-Cooper Sales Co., Inc., Fort Smith, Ark., writes: "For your information I am organizing and expect to put into operation a Rural Motor Express Line, which will probably start with five trucks and will increase as rapidly as capital is available. It is our intention to put some trucks at work immediately, and in the meantime work out an organization, incorporate and finance partly in that way.

#### Wants Poster Advertisements

"We are attaching herewith rough sketch of the route we are to make, showing the distance from Fort Smith to the terminus of each line. We also attach copies of contracts which we are signing with the jobbers and the jobbers' customers. We would like to have copies of any forms which may be useful to us, also posters and other advertising matter.

"We believe that if some kind of system could be worked out, say the cashier

of the better bank in each town could be interested in this proposition, that it would make the matter of organization and stock selling much easier.

"We do not mean to suggest that your committee might be in the stock selling business, but a letter from your office, addressed to these parties mentioned, might have a tendency to make them a little more lenient and free in loaning money to parties who might be interested in buying trucks for this purpose, or becoming financially interested in the parent corporation.

"In view of the fact that we have gotten along as far as we have with this proposition, we will ask that you kindly rush any information that you think will be of benefit to us."

J. D. Eggleston, of the International Harvester Co. at Mason City, Iowa, writes: "In answer to your letter of Aug. 19, the writer has been out of town for some days organizing committees through the different commercial clubs in southern Minnesota and northern Iowa for the purpose of putting motor truck transportation in operation in the different towns.

#### Five Routes Out of Mason City

"You will find enclosed three pictures of the motor trucks you asked for: One on the Mason City-Albert Lea route, showing two trucks; another one on the Mason City-Nora Springs and Osage route, showing four trucks; the other one shows a picture of five trucks on the Mason City-Lake Mills route. Five routes out of Mason City are all that have been laid out as yet, as shown by the map mailed to S. A. Miles some time ago.

"I have addressed the Commercial Club at Austin on two different occasions and at the last meeting a committee was formed in that body to take up motor truck transportation and put same in effect at once and start trucks running over five routes that I mapped out for them. At the last meeting of the Commercial Club at Fairmont, Minn., we had a very enthusiastic crowd of the repre-

sentative business men of the city, and I am convinced that something will be done at that point before many days.

"I am going to Estherville to address the Commercial Club of that city this coming Tuesday night.

"You asked me in your letter to give you a report on all of this activity. This request, however, would be impossible, as the ground covered by this work is so extensive and far-reaching that it would have to be put into book form. In this section of the country, where there is no one who understands or has even seen motor trucks in operation doing freight or express transportation work, it means that the one taking this up will have to put on an educational campaign through literature of different kinds pertaining to same and through circular letters and by addressing the different clubs, Chambers of Commerce, meetings of business men, etc.

#### Has Made Route Charts

"It also means that, not having any routes mapped out or trucks doing this work in this section of the country, you have got to go to a central jobbing center or main railroad center, put on a fleet of trucks, get the freight to ship and bring it before the jobbers, merchants and shippers and the public in general in a concrete form.

"I have gotten up quite a number of charts on canvas showing the different routes in the East and a great many different things pertaining to motor truck and express transportation. The first thing to do, of course, is to map out the routes so that they will cover the most towns used in a radius of 40 and not to exceed 50 miles from the central point, taking into consideration road conditions, population, benefits to both merchants and shippers, and, if possible, to touch all or a part of the inland towns as well as towns where shipments would have to be made over two railroads from your central point.

"Will say in conclusion that to do all this is no boy's job, as it takes hard, persistent work from start to finish."



# Are You on a War Basis?

IF NOT, WHEN ARE YOU GOING TO GET THERE?

ARE YOU GOING TO DELAY UNTIL IT IS TOO LATE?

*By Ray W. Sherman*

"GOSH!" Henry Bennett, who sold the Redman in and about Callawassa, was quite "het up" as he dashed into the office of C. J. Reilly, Inc., merchandiser of the Sennett—when there were any—and at present selling a long line of automotive products.

"Geel!" exclaimed Henry, waving in Reilly's face a letter which bore the mark of the Redman factory. "Just got a letter from the factory saying there won't be any more Redman cars made after the first of the year."

"Are you surprised?" calmly asked Reilly.

"I should say I am!" asserted the Redman dealer. "I knew we wouldn't get many but I never suspected they would quit entirely on such short notice."

"Never even heard rumors of it, did you?"

"Well—" but Reilly interrupted:

"You ought to take a good paper, Henry. There's great news these days. There's a war on in Europe. Been running now for over four years—"

"Aw, cut the comedy, Reilly. What do you think this is? A joke?"

"Far from it. It's a serious business matter—and has been for a long time—as I have several times told you. If you had listened a little more attentively during past months you wouldn't be so surprised at this late day to discover that the business situation is serious."

"Maybe that's true," Henry said, "but what I'm upset about is what I'm going to do. I've got a place of business down there and nothing to do but sell cars—and if I don't get any cars how am I going to get by?"

"If your whole business is selling cars I don't think you will get by," was Reilly's cutting observation.

"What am I going to do? Shut up shop?"

"Probably."

"Geel! Ph-e-w-e-y! Nice little crepe hanger, aren't you?"

"Henry," said Reilly, hitching over to the edge of his chair, for emphasis, "long ago I told you to get on a war basis and you laughed at me. Now you've quit laughing. I tried to save you when the saving was good and you wouldn't take my advice. Now you come to me and want advice. What can I tell you?"

"I don't know, I'm sure," replied the much subdued Henry. "I remember now that you have talked with me a lot about

business conditions and all those things, but, honestly, Reilly, I never thought—I didn't—well, I just didn't realize that the situation might get serious. All summer I have had cars to sell, and as long as I had cars the day I wouldn't have any seemed far away. It always seemed like a situation that could be taken care of when it came. I never believe in crossing bridges before you get to them."

"Fine philosophy, Henry. And, seeing that you're at the bridge this morning, just go ahead and cross it. Go ahead, why don't you?"

"Don't, Reilly! Please don't. That hurts."

"If it had hurt more several months ago it wouldn't hurt as much to-day," declared the Sennett dealer. "This bridge you didn't want to cross was right in front of you. To-day you're part way over. There's only one thing for you to do now."

"What is it?" eagerly asked Henry.

"Do some darned serious figuring and get on a war basis. If your figures show that you can't get by—then quit NOW. Don't waste your bank roll trying to beat a losing game."

"Very well. How do I begin?"

"Like this," Reilly explained. "You find out what it is costing you to do business and then find whether you can do business enough to keep your head above water. If you can't—you're through."

"As a starter, check carefully over your whole business. Take all your expenses and go through them item by item. For instance: You may find that your electric bills run ten dollars a month. Maybe an investigation will disclose that the people in your organization are careless and leave lights burning unnecessarily. Perhaps, with a meeting of the whole organization and a statement of the seriousness of the situation, you can cut down some of this waste. Maybe a lot of it goes for pumping free air. Perhaps you can charge for the air and get some of the expense back again. Perhaps you can cut out a light here and there. There are numerous ways that you know as well as I do about how to cut down the electric light bill."

"Then take such things as the payroll. You are losing employees right along, and perhaps you can get along without some of them. Perhaps there are certain lines of work you can dispense with—but be careful about cutting off necessary

work. Perhaps you can cut out some work, however, and get along with a smaller organization."

"Then there's the rent. You have a pretty fair sized building in a good location. If you don't need it all maybe you can rent part of it. Had I had your building I would have rented some of it long ago. You have always had more room than you need."

"And your water bill. Watch it. See where the water's going and see if you can't save some. Watch your supplies, your shop system, your labor hours, and all the other things that make up your cost of doing business. See if better system somewhere won't save you some expense."

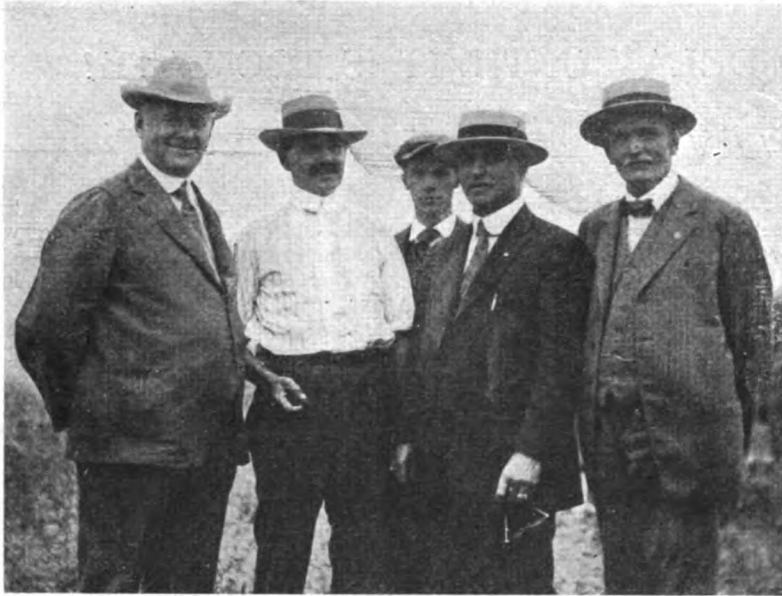
"After you get all through figuring, add up the total of what you think you can bone your expenses down to and then figure on means of income. Your cars are going to be a dead issue, so you might as well mark them down as nothing. You, however, have a good service station, and there is going to be a lot of repairing necessary. By advertising, soliciting and circularizing you may be able to develop a paying business in your service station. Perhaps your repairing, supplies and gasoline will carry your overhead. And don't forget used cars—on a sane basis."

"Long ago you should have had your truck business spinning, and you should have had a tractor agency. You should be selling tractors, and trailers, and unit light and power plants. This territory needs a lot of things, as I told you long ago, and there is a big chance for you, but you always pooh-poohed this automotive idea and wouldn't look at it seriously."

"Well—there's only this for you to do: Get your expenses down to a minimum and your business up to a maximum. Try it a month or two and see how it works. Then, if you find that you can't get away from a big loss there is only one other thing to do. Count your bank roll and set aside a good sum with which to get under way after the war. Count what's left and see if it's enough to carry you for a year. If it is—and you work like hell—you may be able to better conditions and lose less than you thought. And—" and Reilly shook his finger in Henry's face—"and if you will do some real figuring and WORK, I think you can get by and save your business."

# Speeding Up Tractor Sales

## IN NEW YORK STATE



**MEN WHO HAVE AIDED IN AROUSING TRACTOR INTEREST AMONG NEW YORK STATE FARMERS.—**  
*From left to right they are: Thomas J. Northway, State distributor of the Fordson; David C. Vann, manager of the Monroe County Farm Bureau; F. G. Behrends, State superintendent of farm machinery; John Mitchell, head of the New York State Food Commission; Calvin J. Huson, director of the State Bureau of Food Production*

**N**EW YORK STATE, notwithstanding the fact that its area available for tractor development is very small in proportion to its size and population, has forged rapidly to the fore in tractor sales.

On January 1 of the present year there were 2015 tractors in the state, while by Sept. 1 there were over 4000. Thus in the first eight months of the year the number of tractors in operation was increased 100 per cent. Actual tractor sales were increased by over 1000 per cent.

### 4500 Tractors Contracted For

And the end is not yet in sight. The state distributor of a much talked of make of tractor announced recently that his dealers throughout the state had contracted for 4500 tractors to be delivered before July, 1919. It is not too much to expect that other distributors are receiving advance orders on the same scale. It is not unreasonable to believe that by the middle of next year there may be 20,000 tractors in operation in New York State if there are that many to be had.

The reason for this is not hard to seek. It has been achieved by the co-operation of the State, the distributor, the dealer and the farmer. The tractor's value as

an aid to war-time food production was quickly recognized, and it was on this basis that most of the tractor sales were made. New York State has determined to increase its food production up to the greatest possible standard, and in this program the tractor promises to play the stellar role.

Much of the credit for creating this great demand for tractors is due to the New York State Food Commission, which early in the year succeeded the old Food Supply Commission, and to its hardly less important sub-divisions, the Bureau of Food Production and the Farms and Markets Bureau. By the co-operative leasing of State-owned tractors, and by arranging for a series of tractor demonstrations held in various parts of the state, illustrating to the farmer, practically on his own land, the work of which the tractor is capable, and its superiority to horse-power, the promoters have convinced the farmer that the tractor is the only agency which can be depended upon to replace the depleted man-power of the farms.

The men at the head of these bureaus are John Mitchell, State Food Commissioner and chairman of the Farms and Markets Bureau, and Calvin J. Huson, director of the Bureau of Food Production. Through their efforts New York

## *What the New York State Food Commission Has Done to Aid Farmer and Dealer*

will always stand foremost in the matter of increased food production, for the tractor is here to stay.

From its predecessor, the old Food Supply Commission, the New York State Food Commission inherited 23 tractors, in more or less usable condition. It was early realized that these could be of immense value if they could be put to work for the farmer. A plan was devised for their leasing which operated so admirably that 47 additional tractors were purchased, and at the present time there are 70 tractor demonstrations in the state on every working day. Every farmer on whose farm one of the State-owned tractors operates, even for a day, becomes a potential tractor prospect.

### Tractor Leased to Group of Farmers

Three plans were devised by the State for the leasing of these tractors, as follows:

The first plan, and the one under which most of the tractors are operating, is to lease the tractor, and its accompanying implements for the fitting of the soil to a group of farmers who are situated in a community adapted to tractor cultivation. The rental price is fixed at \$75 a season for a two-plow outfit and \$100 for a three-plow outfit. This is merely a nominal charge, and hardly covers the depreciation and the wear and tear on the tractor.

The State, however, does not expect to derive any revenue from the rental of the machines, other than enough to defray their upkeep. A bond is given by the farmers for the return of the machine in good condition Dec. 1.

The second plan is to lease the machine on the same terms to a skilled tractor operator, likewise situated in a community suitable to tractor cultivation, who agrees to work for his neighbors at a nominal price per acre.

The third plan, under which very few of the machines have been leased, is to rent the machine to an individual farmer, who has an exceptionally large acreage, and who agrees to employ an expert operator if he is not proficient in the use of the tractor himself. This farmer agrees also to work for his neighbors when his own work has been completed.

Under all three plans the number of



*A view of one of the recent State demonstrations held at Gates Center, Monroe County, showing the Maxim tractor, demonstrated by R. H. Hayes*

acres which may be plowed and fitted on any given farm is limited, since it was the plan of the Food Commission to aid as many individual farmers as possible. It was believed that if a number of farmers could be encouraged to plant from 15 to 25 additional acres through having their ground fitted for them by one of the State-owned tractors, a greater stimulus would have been given to food production than if a quarter of that number had been allowed to fit all their land by this means.

#### Assured of Co-operation

It was also realized by Commissioner Huson that there would be many days when the 2015 privately owned tractors in the state would be standing idle, and accordingly letters were sent to every tractor owner in the state, calling upon him as a patriotic duty to aid his neighbors in fitting their ground for planting when his own work had been completed. Over 1000 replies were received to this batch of letters and the Food Commission was assured of the heartiest co-operation of these tractor owners.

Although the farmers of New York State have for many years been familiar with automotive affairs, it was realized that many problems in the care and operation of the tractor would arise which they would be unable to solve.

Accordingly a state department of farm machinery was organized under the direction of F. G. Behrends, and the state divided into seven sections, each of which was placed in charge of a tractor expert. Each of these men was given charge of ten of the State-owned tractors, and his services placed at the disposal of the lessees of these machines. They form a rapid-fire service department furnishing 24-hr. service. As a recognition of the service the farmers who already owned tractors were performing in assisting

their neighbors, the service was extended to include these men.

That the men selected for this work were real experts is proven by the fact that the seven men whom the Civil Service Board allowed the Food Commission to appoint temporarily to the positions stood at the head of a class of forty when a competitive examination for the positions were finally held. The good accomplished by these men in increased food production and in preparing the way for the tractor dealer is inestimable.

With the co-operation of the County Farm Bureaus and in some cases the automobile clubs of the state a series of twelve tractor demonstrations are being held in various portions of the state, at each of which from ten to fifteen makes of tractors have been exhibited.

These demonstrations were the result of thousands of letters which were received last spring by the Food Commission, asking for advice on the make of tractor best adapted to the locality in which the inquirer was located. It was not within the province of the Food Com-

mission to recommend any one make of tractor above another, even had it been prepared to do so, which it was not. Realizing that one make of machine might be better adapted to a certain locality than another, it was decided to hold demonstrations in all parts of the state, at which all makes of tractors might be entered, thus giving the farmer the opportunity to judge for himself the machine best suited to his requirements.

These demonstrations have been an unqualified success, and have resulted in the sales of hundreds of tractors, as well as the creation of thousands of prospects. At no single demonstration has the attendance been less than 2500, from which it has run as high as 8000. The average attendance has been in the neighborhood of 4000 people.

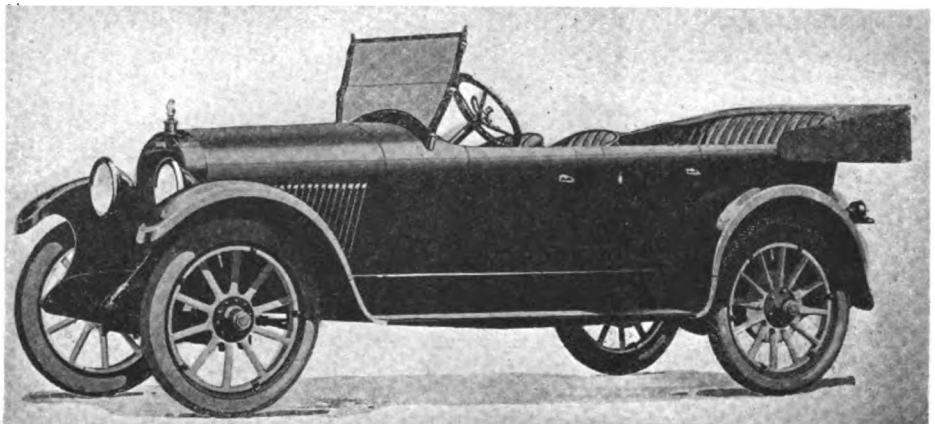
It is not the intention of the Food Commission to enter into tractor renting as a business proposition, although the number of State-owned tractors may be increased to 100 in 1919. It is realized, however, that many farmers are financially unable, owing to war-time conditions, to lay down the cash for the purchase of a tractor and its accompanying instruments, and also that owing to the heavy demand from the West for tractors it is almost impossible to produce them in quantities equal to the demand. It is a war-time proposition pure and simple.

#### Has Investigated All Prospective Purchasers

That this is recognized by the tractor dealers and distributors of the state is evident from the hearty co-operation which they have extended to the Food Commission. One distributor, who has placed 1000 machines in the state this year, has co-operated to the extent of personally investigating each prospective tractor purchaser, and refusing to make the sale unless it was positive that it would result in increased food production, and the purchaser would agree to work for his neighbors when his own work was completed.

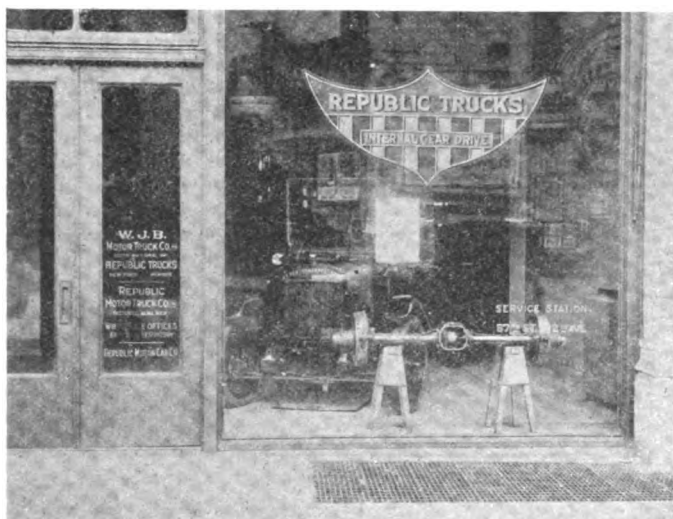
The dealers recognize that tractor publicity means tractor sales and have co-operated to the extent of their ability.

From his experience it is estimated by Director Huson that any farmer who works fifty acres of ground can use a tractor to advantage.



*In the new Lexington touring car the radiator has been slightly raised*

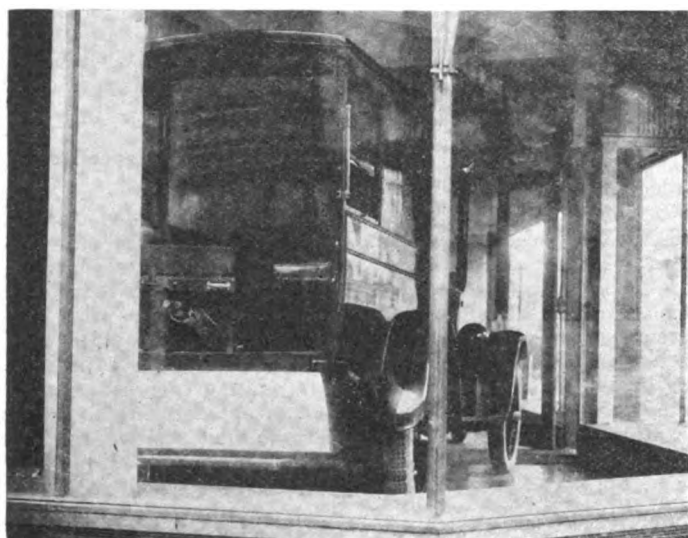
# MOTOR TRUCKS



*Republic trucks occupy the front line trench in the window of the Republic Motor Truck Co., 1832 Broadway*

## *Business Cars Nosing Out Passenger Cars on the Gay White Way*

**T**HESE photographs were all taken along New York's famous Upper Broadway—from the "Roaring Forties" on up to the Sixties. This is right in the heart of the theatre and café district and shows the trend of the time toward a greater concentration on business activities. These places have more orders than they can fill.



*Above — Studebaker business cars are a prominent feature of the show window at Broadway and Fifty-sixth Street*



*The Corbitt is prominent in the window of the Stanley A. Martin Motors Co. at Fifty-eighth Street*

*Right—Little Giant trucks look out on the famous thoroughfare from the place where C. T. Silver used to display the Kissel line, which has moved to Fifth Avenue*

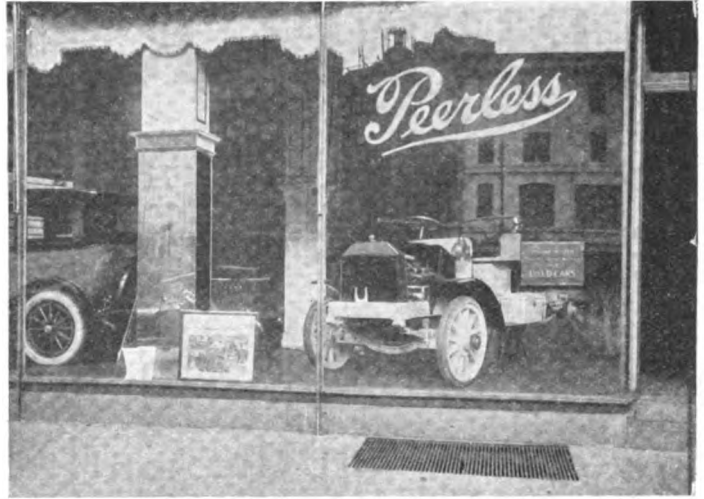




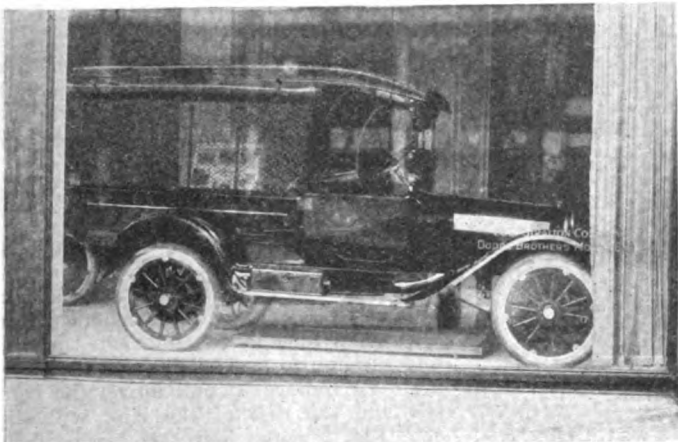
# ON BROADWAY



*The Nash and Titan lines are prominent in the window of Kaufmann-Morris Co. at Fifty-seventh Street*



*Up above Columbus Circle the Peerless beacons to the passer-by from the window of the Peerless Motor Car Co.*



*The Dodge business car is prominent among the display cars of the Colt-Stratton Co.*



*Above — The window of the Fulton Motor Truck Co., just below Columbus Circle, is devoted to merchandising talks written on giant slates*



*Left—Maxim trucks and farm tractors are right down in the heart of things at Fifty-first Street, nearly across from the Winter Garden*

*A Department of***BETTER MECHANICS***No. 82***HOW TO****Reline and Adjust the Brakes and Adjust the Chain on the Garford 6-Ton Truck**

By J. HOWARD PILE

**What You Will Need for This Repair****Materials**

- 4 pieces of Brake Lining, 5/16 x 4 x 22 3/4 in., for rear wheel brakes.
- 2 pieces of Brake Lining, 5/16 x 4 x 11 in., for service brake.
- (This makes 5 ft. 3 in. altogether of material 5/16 x 4 in.)
- 108 Copper Rivets, 1/4 x 5/8 in.
- 4 ft. of Iron Wire, about No. 12.
- Assortment of Cotter Pins.
- Heavy Grease for Rear Axle Bearings.
- Kerosene for Cleaning.
- Gear Oil or Beef Tallow and Graphite for Chain.
- Necessary Parts to Replace Those Found Damaged.

**Tools**

- Heavy-Duty Lifting Jack.
- 2 Short Horses or Wood Blocking to Block Axle.
- Pair of Pliers.
- Screw Driver.
- Hub-cap Wrench.
- Assortment of Solid Wrenches.
- Monkey Wrench.
- Nail Set.
- Large Punch (1/2-In. Diameter).
- Ball Pein Hammer.
- Cold Chisel.
- Hack Saw.
- Drill Press or Breast Drill.
- 1/4-In. Twist Drill.
- Countersink or 1/2-In. Twist Drill.
- Piece of Drill Rod, 3/8 x 6 In.
- Rivet Set.
- Large Pair of Calipers.
- Coarse File.

5—Remove the two cotter pins from the outside of this link.

6—The side plate of the link will then slide off and the other half of the link can be pushed out.

7—Roll the rear wheel backwards and the chain will run right off.

8—Lift the remaining part off of the jackshaft sprocket.

9—Remove the locking ring from one of the rear-wheel hubs. This is a circular piece of heavy wire with one end bent at right angles, this bent end going through a hole in the hub cap through into the hub to prevent it from unscrewing. To remove it, pull up on the bent end and the rest of the ring will slip off. Fig. 2 shows how this can be done with a screwdriver.

10—Unscrew the hub cap with the hub-cap wrench.

11—Remove some of the surplus

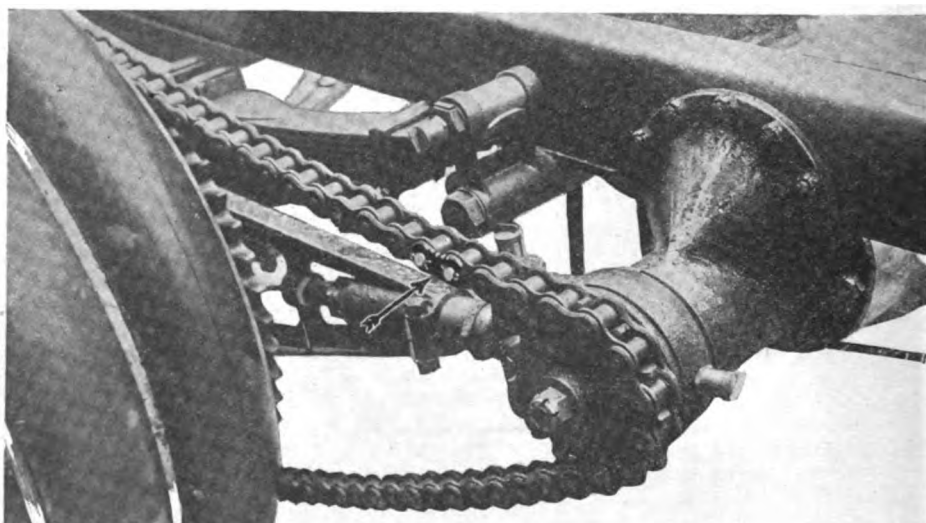
**T**HE Garford Model 69 6-ton truck is chain-driven and the brake mechanism differs from that of the smaller worm-drive models in that the emergency brakes in the rear wheels are in two sections so that care must be taken to adjust the two halves to allow each half to do its share of the braking. The service brake is on the countershaft of the gearset.

1—Jack up the rear axle at both wheels.

2—Place short horses or blocking under the axle at both ends and remove the jacks.

3—See that the gearset lever is in neutral.

4—Turn the rear wheel around till the connecting link in the chain lies between the sprockets and is on top. This connecting link is the only one in the chain which can be removed by hand. Several notches are cut in the top of one of the side plates so that it can be easily identified. (See Fig. 1.)



**Fig. 1—The connecting link in the chain shown by the arrow can be removed by turning it on top and about 2 or 3 links from the jackshaft sprocket**

grease from the hub with a small stick or screwdriver.

12—Remove the cotter pin and the two wheel nuts from the spindle of the axle.

13—Place a greased board or iron plate under the wheel and slide the wheel off on this. All the bearings will come off with the wheel.

14—Remove cotter pins from the pins in the brake cam.

15—Remove the pins from the brake cam.

16—Unscrew the brake eye-bolts from the top and bottom halves of the brake bands.

17—Remove the large brake pins that the eye-bolts screw into. They will slide out after the eye-bolts are removed unless they are burred, in which case they are to be driven out with a punch and hammer.

18—Remove the cotter pins and nuts from the two brake anchor pins at the forward end of the bands. The bands oscillate on these pins.

19—Drive out the pins from the brake anchor.

20—Remove the two halves of the brake band.

21—Remove the rivets from the old brake lining. There are 18 rivets in each half of the band, placed in 6 rows of 3 each. They may be driven out with a small nail set and a hammer, or a cold chisel slipped under the old lining will cut them off and remove the old lining at the same time.

22—The new lining is to be cut from lining material 5/16 in. thick, 4 in. wide and 22 1/4 in. long.

23—Clean off the surface of the band, removing rust and dirt.

24—Fasten the new lining to the band with wire, as shown in Fig. 3.

25—Drill holes through the new brake lining from the inside of the band, going through the old holes in the band. The drill diameter is to be 1/4 in. This can be done with an electric portable drill, breast drill, or it can be done on a light spindle drill press.

26—The holes are to be countersunk 3/8 in. on the outside using a 1/2-in. drill or a regular countersink for the purpose. The wiring is not to be removed until after the new rivets are fastened in.

27—Put in new 1/4-copper rivets 5/8 in. long. The heads go on the lining side and the heads are riveted over on the band side. This is done by catching a piece of 3/8-in. drill rod in the vise to hold the heads, as shown in Fig. 4. A ball-pein hammer is used to shape the heads and a rivet set may be used to finish off with if desired.

#### Replacing the Bands

28—Replace both bands and slip the brake anchor pins into place in the brake anchor.

29—Replace the nuts, tighten and replace the cotters.

30—Replace the large brake pins in the other ends of the bands.

31—Screw the eye-bolts into these pins.

32—Replace the pins in the brake cam, the pins going also through the eyes of the eye-bolts. Do not replace the cotters yet.

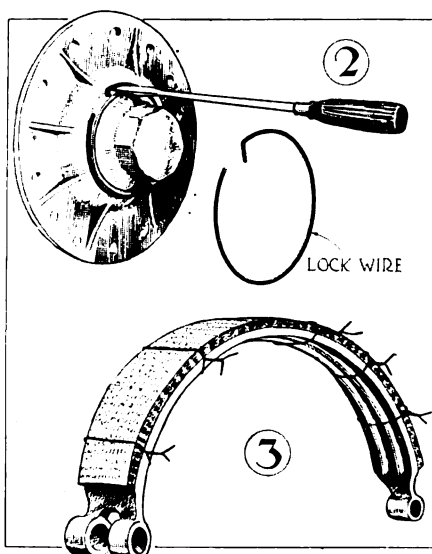


Fig. 2—The wheel-hub locking ring holds the hub cap to the hub and can be removed by inserting a screw driver as shown

Fig. 3—Method of wiring the new linings to the brake band while drilling, countersinking and riveting

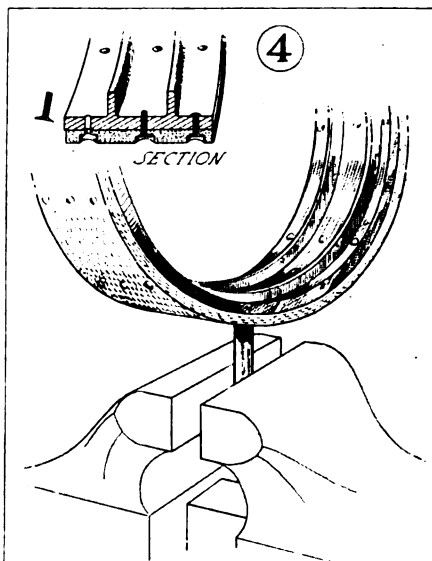


Fig. 4—A piece of drill rod held in the vise serves as an anvil to hold the heads of the rivets while forming the other ends

33—Adjust the brake-band distance by means of the eye-bolts. There are two methods of doing this. The first is the best, but it is not worth the trouble if only one job is to be turned out. If three or more trucks are expected to have the same repair, the use of the device is recommended. The second method can be worked out with a large pair of calipers.

First Method—Get an old inside race of the inner wheel bearing and see that it will slip on and off the large part of the axle spindle easily. If it does not, grind it out a little. Soften one side of it by heating it to a cherry red and letting it cool slowly. Drill a 3/16 hole about the center. Tap this out with a

1/4-in. U.S.Std. tap. Cut a thread on the end of a piece of 1/4-in. drill rod to a depth of 1 in. Put a locknut on first and then screw the old bearing race on. Grind down a large nut to the same angle as that of the bearing. Bend the drill rod over at right angles 8 1/4 in. from the inner edge of the bearing. This distance when the race is placed on the axle will be exactly the inside diameter of the brake drum, when the rod is swung around in a circle. Fig. 5 shows the use of the first method. The use of the locknut allows a slight variation in the distance, but the rod cannot be screwed in so far that it extends through the race. By swinging this device around, the eye-bolts can be screwed in or out until all parts of the lining are at equal distances from the center of the axle and consequently all parts of the lining will touch the drum and press on it equally when the brake is applied.

Second Method—Using a large pair of calipers, adjust the eye-bolts in or out till the diameter of the lining on the bands is 19 1/4 in. at all points. Fig. 6 shows the second method of adjusting the drums.

34—If any points of the lining will not come within the required distance by adjusting the eye-bolts, they will have to be filed off with a rough file until they come within 1/16 in. at all points.

35—Replace cotter pins in the brake-pin cams.

36—Replace the wheel on the spindle.

37—Replace the wheel nut and screw it up.

38—Spin the wheel and keep tightening the wheel nut till it stops the wheel from moving, then back it off a little till the wheel turns easily. A little too loose is better than a little too tight.

39—Replace the locknut and set up tight.

40—Replace the cotter pin and spread the legs.

41—Put grease in the hub cap.

42—Screw on the hub cap with the hub-cap wrench.

43—Replace the hub-cap locking ring after getting the holes in the cap and the hub to coincide so that the bent end of the ring will go through easily.

#### Lubricating and Replacing the Chain

44—Remove all dirt, grit and grease from the chain and both sprockets with gasoline, kerosene or hot soda solution.

45—Draw the chain slowly through a pan of gear oil which has been heated to about the temperature of boiling water.

46—Lay the chain on a clean board and push the ends together, making the chain as short as possible so that the grease will get against the surfaces that ordinarily wear against each other when the chain is pulled out. Leave the chain in this position till it has entirely cooled so that the grease will harden or set. A mixture of three parts of beef tallow and one part of flake graphite is also recommended.

47—Remove or loosen the locking nut and bolt on the radius rod.

48—Adjust the large nut on the radius rod until with the top part of the chain

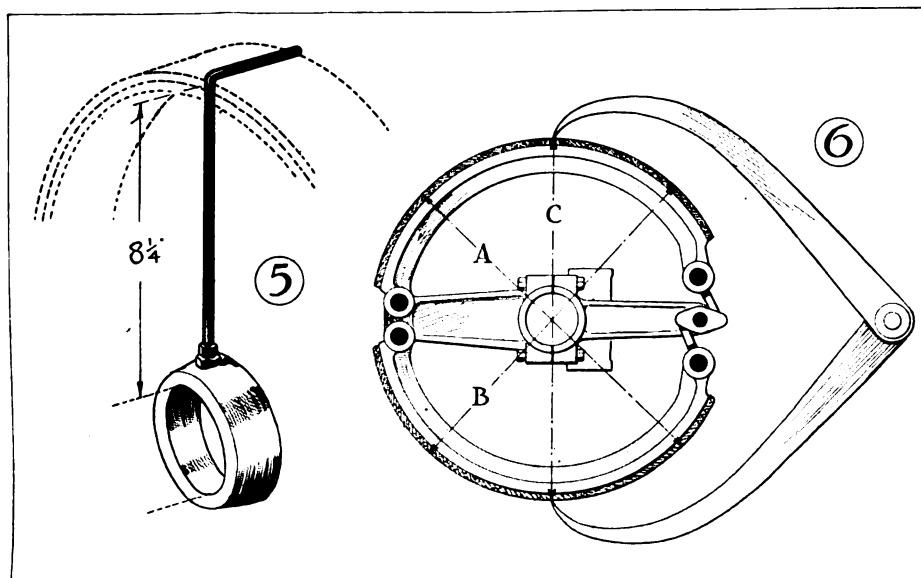


Fig. 5—The first method of checking adjustment of the two rear wheel brake bands. Fig. 6—Second method of checking the adjustment of the brake bands by means of a large pair of calipers

tight, the lower part of the chain can be raised 1 1/2 in. at the center. See Fig. 7.

49—Adjust the other chain so that it has exactly the same amount of slack.

50—The brakes are equalized, but they must be adjusted with the pull rods till they both take hold at once and hold with the same grip when the brake lever is pulled back.

51—Remove the retaining pin from the clevis.

52—Slacken the adjusting nut.

53—Turn the clevis to shorten or lengthen the rod till both brakes are all the way off when the brake lever is all the way forward, they both start to take when it pulled back a little way and both hold equally when the lever is pulled back a little further.

54—Tighten the adjusting nut.

55—Replace the retaining pin.

#### Relining and Adjusting the Service Brake

The service brake is of the external contracting type and acts against a drum which is keyed to the end of the gear-set countershaft, which extends through the forward end of the gear case. The anchor pin for the brake bands is fastened into a lug extending downward from the front gearcase wall by a nut and cotter, the bands being also held on by a nut and cotter. Adjustment of the brake is by means of a wing nut and double nut on the top. This wing nut is held from turning in service by a series of notches and grooves. Both bands must be adjusted to bear on the drum equally, and this is accomplished with the two hexagon nuts on one side of the bracket. To take down the bands, reline and adjust, proceed as follows:

1—Disconnect the pull rod from the toggle lever by taking out the pin.

2—Slacken up the bands by unscrewing the wing nut.

3—Remove the two cap screws and nuts holding the pin bracket to the cross member of the frame.

4—Remove the cotter pin and the large

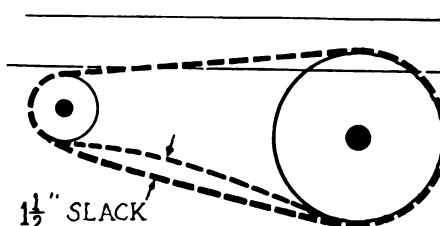


Fig. 7—This diagram shows the correct amount of slack that should exist in the chain for proper operation

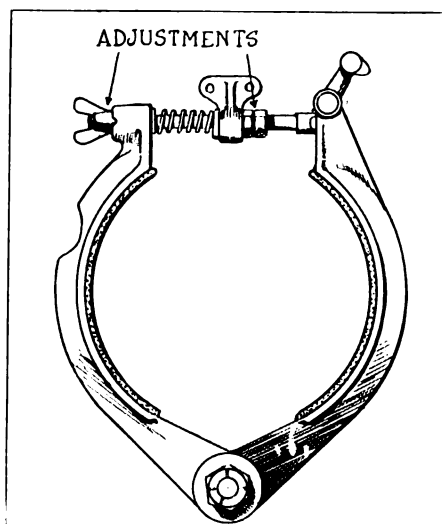


Fig. 8—The service brake is adjusted with the double nut and wing nut, the proper adjustment of both of these allowing both halves of the brake band to be applied equally

nut from the forward end of the brake anchor pin.

5—The entire brake-band mechanism will now slide forward on the anchor pin and can be taken right out of the chassis by maneuvering it sideways between the muffler and the propeller shaft.

6—The operations of removing the old lining and riveting on the new lining are exactly the same as described in opera-

tions 21 to 27 for the emergency brakes excepting for the size of the lining, which is 5/16 x 4 x 11 in.

7—Replace the bands on the anchor pin.

8—If there are any high places in the lining, the bands are to be taken off again and the high spots taken down with a file.

9—Replace the anchor-pin nut and cotter.

10—Replace the pin bracket on the frame cross-member.

11—Adjust the double nut so that the two bands have the same amount of clearance. (See Fig. 8.)

12—Lock the double nuts together.

13—Connect the pull rod to the toggle.

14—Adjust the yoke on the pull rod so that the bands clear the drum when the pedal is all the way out and start to take hold when the pedal is pushed down slightly. Adjustment of the yoke on the pull rod takes care of the slack between the pedal and the pair of bands. Adjustment of the double nut and wing nut is for the purpose of getting both bands to press equally on the drum.

15—See that the drum wheel is tight on the end of the countershaft. If it has any lost motion, remove the cotter pin, tighten it up and replace the cotter pin.

16—The brake can be tested when the rear wheels are jacked up.

#### Dealers Watch California Tractor Demonstration

LOS ANGELES, Sept. 14—Passenger car and motor truck distributors are looking forward with interest to the third annual tractor demonstration which started Sept. 17 and will run to Sept. 21. The demonstration is conducted by the Traction Engine and Implement Dealers' Association of Southern California, and although only one motor car dealer is affiliated with that association in any way, many will watch carefully the sales development end to ascertain possibilities for themselves. This will be in decided contrast to last year, when scarcely half a dozen motor car dealers showed enough interest in the tractors to take the trouble to attend the demonstration.

W. J. Burt, for years an exclusive motor car dealer, is the latest Los Angeles convert to the tractor. He has taken an agency. He is especially well equipped for tractor service, inasmuch as he has one of the largest machine shops in the city. He is the second car dealer to enter the automotive ranks.

The tractor demonstration is held on a 600-acre field and the number of exhibitors approaches 150. Practically every make of tractor that was seen at Salina, Kan., is in operation and in addition a number of local products. Manufacturers of farming machinery of all sorts are liberally represented.

Farm implement dealers at this time control the tractor business. Right now the market for farm lighting devices is very limited here, as electric power lines radiate in almost every direction, but a little energy would develop the possibilities in the more remote localities.



The editor of this department is glad to answer questions. In sending queries, always include copies of contracts, notes, etc., to which you refer.

# THE LAW

By George F. Kaiser

As It Applies to  
Dealers  
Repairmen  
Garagemen

## Holding Mechanics Through Labor Contracts

**E**DITOR Motor World: Because of the shifting condition in the labor market and the rapidity with which skilled mechanics jump from job to job whenever they see an opportunity to better themselves, would it not be a good thing for all employers of labor to require yearly contracts with those who work for them? In case I hired a mechanic at a certain wage, on a yearly contract, could I not hold him to this contract for its duration? What would be my status in case such an employee jumped the job and went to work for another man? Would I have any redress against the other employer or against the man, and is there anything I could do to compel this employee to remain in my service?

If such contracts were used generally by all dealers, and if every dealer was sufficiently co-operative to require that an employee come to him with a clean record, would not contracts of this kind, used by all dealers and garagemen, tend to stabilize the labor market? What is your opinion on this question, and do you consider it advisable as a business move? Would you recommend it for adoption by all dealers and garagemen? Could you recommend a short and binding contract for this purpose?—V. S., New York, N. Y.

### Should Bind Employees

**Answer**—It is always advisable to bind an employee who has some particular skill or knowledge which is of use in your business by having him sign a contract for some definite period. Of course, it is not worth while to try to hold unskilled labor in this way, because, not having any skill in the work they are doing for you, they are not apt to procure the same kind of work if they break their contract and leave, but will be satisfied to perform unskilled labor in any other kind of business.

When an actor, chemist, engineer or some other person who is possessed of peculiar skill in his calling breaks a contract and leaves his employer he can be prevented by injunction from re-engaging in the same kind of work for another employer. It is different with an unskilled laborer, however, for if he were prevented from engaging in any one kind of work he would simply get employment at some other kind, because he has

no special skill or knowledge which makes it profitable for him to give his time to any one particular line of trade.

*I therefore consider it a good thing to enter into contracts with skilled mechanics but not worth while to bother contracting with unskilled employees.*

In the event of a broken contract your rights would primarily be against the employee. You will have a right to restrain him by injunction from giving the time you contracted for to some competitor. *Your rights against competitors would arise only in the event that they persuaded him to break his contract*, in which case you would have an action against them for damages. There is no way to compel a man to remain at work for you; but if he refuses to work for you, you can, through the courts, prevent him from working for any one else in the same capacity if he breaks his contract.

I believe that the general use of contracts by dealers and employees at this time would be a good thing; always providing, however, that the dealers who have contracts will be patriotic enough to disregard their personal interests for the benefit of the common good in cases where mechanics, etc., wish to leave their employ and enter the government service. I think the following short form of contract would be suitable for use in the majority of cases. It is always better, however, to have a contract prepared especially for each particular case. It may cost a little more but it is generally worth while in the end. However, those who feel that they cannot afford to have a special contract drawn up can use the following form as a model:

New York, July 1, 1918.

This Agreement, made this 1st day of July, 1918, between John Jones, doing business under the trade name or style of Empire Garage, employer, and William Smith, employee, WITNESSETH, as follows:

That the said John Jones does hereby employ the said William Smith as an automobile mechanic for the period of one year beginning July 1st, 1918, or so long as the services of the said William Smith shall be satisfactory to the said John Jones, at a weekly salary of thirty-five (\$35.00) dollars per week, except in the event that the

said John Jones should sell, change or retire from his present business, in which event this contract may be terminated upon the giving of one week's notice.

The said William Smith does hereby agree to give his entire time and services to the said John Jones during that period. By entire time is meant not less than eight hours per day, excluding Sundays.

Witness, Frederick Brown.

(Signed) John Jones.

(Signed) William Smith.

If the above contract is used the employee can be discharged at any time, while ordinarily if a man happens to be working by the week, month or year he will simply sit back and collect his wages for the unexpired time for which he was hired. When the above contract is used, however, a man should not be discharged unless the employer is really dissatisfied with his work. If the dissatisfaction is a mere pretext to get rid of a man he will still be able to recover his salary for the unexpired term.

The above contract is also useful if the employer wishes to sell out or retire from business, as he will not have to continue paying the man's salary or make a settlement with him, as he might have to do if his contract were not worded like the one above.

### Store Door Delivery in Philadelphia

PHILADELPHIA, Sept 12—Covering delivery in this city of less than carload freight lots, the railroads, according to federal plan, in co-operation with the Chamber of Commerce, are putting into effect a "store door" delivery system. Consignees will have only 24 hours in which to remove freight after it arrives. Failing in this, the freight will be loaded on motor trucks and delivered to the consignee at his expense for the hauling. The purpose, as in other cities, is to release cars without delay and to prevent their use for storage purposes. This plan is a step in advance of a ruling effective early in the summer, whereby consignees were allowed telephone notice of the arrival of a shipment and 48 hours in which to remove the goods. The Pennsylvania Railroad, under a new plan whereby the city is divided into 14 shipping zones, will take all shipments consigned to the western destinations, as Harrisburg and beyond; the Reading to the north and northwest and the Baltimore & Ohio to the south and southwest.

# Repairshop Shortcuts

*From Motor World Mechanics*

## No. 1528—REMOVING A CYLINDER HEAD

The cylinder head of a block engine is easily removed by tapping the shells of two old spark plugs out with a 9/16 x 12 tap, screwing these two shells in the spark plug holes of cylinders 1 and 4 and screwing a 9/16 x 5-in. cap screw into the shells. By setting the cap screws down, they will push against the inlet valves and raise the head without damaging the gasket. The inlet valves are to be down at the time.—F. C. Woodland, Norris City Garage, Norristown, Pa.

## No. 1529—CUTTING SHIMS FOR MAGNETO END-PLAY

Fish-paper shims for taking up the end-play in magneto armatures are cut accurately and quickly by placing a bearing cone in the vise with the paper toward the workman and running a sharp knife around the inner edge of the cone so that the inner edge of the shim is smooth and clean. The shim is then placed on the shaft and the outside trimmed with the knife.—R. J. Everest, Los Angeles, Cal.

## No. 1530—REAR SUPPORT FOR FORDS

A rear support for Fords while removing the axle or wheels is made from two old rear-axle housings cut off 19 in. from the center. The small end is bent in a little so that the stand will straddle the runningboard brackets. When the car is set up on these props the rear wheels and axle may be taken out.—Leo Handy, Mownich Garage, Fremont, Neb.

## No. 1531—REMOVING FORD SPINDLE BUSHINGS

The bushings can be removed from the Ford spindle with a rat-tail file. The file is held in a vise by the tang end and the bushing screwed onto it tightly. The spindle is then driven away from the vise with a hammer, the file holding the bushing with its teeth.—P. C. Haines, Sidney Motor Co., Sidney, Neb.

## Make a Dollar

*HOW often have you been compelled to rack your brain to overcome some difficulty? But when you did find a solution—what a satisfaction it was! Well, here's a chance for you to dig some of those life-savers out of their hiding places and put them to work for your fellow-craftsmen. Send them to Motor World. We will pay you a dollar for every one accepted for publication. The only requirements are these:*

- 1—Describe the shortcut briefly but clearly, in few words.
- 2—Send a sketch, in pencil or pen, no matter how rough; our artists will finish the job.
- 3—Write on ONE side of the paper only.
- 4—Sign your name and initials, the name of the company you are with, and the town.

*Write plainly. If your name is unusual, print it in capital letters.*

## No. 1532—SPLIT PUMP-SHAFT PACKING NUT

A split pump-shaft packing nut obviates the necessity of taking out the pump shaft if it is necessary to replace a damaged nut. The nut is turned up on a lathe after it has first been split and then fastened together with machine screws. The split nut is then bored out and threaded, after which it is separated and assembled around the shaft.—Ray L. Martin, Martin's Garage, Fort Worth, Tex.

## No. 1533—REMOVING THE CLUTCH FROM A CHEVROLET 490

The cone clutch is removed from a Chevrolet 490 by a device which allows the clutch pin to be driven out. A 3/4-in. gas-pipe coupling is notched so as to straddle the clutch pin. Two

5/16-in. S. A. E. bolts 2 in. long are used to hold the strap against the coupling, the bolts going into the clutch-yoke collar. Screwing down on the bolts releases the clutch at the same time compressing the spring so that the pin can be driven out of the spring shaft. This releases the clutch from the flywheel.—L. M. Sheetz, Sheetz Quick Service Garage, Pilot Cove, Mo.

## No. 1534—REPLACING VALVE SPRINGS ON A GRANT

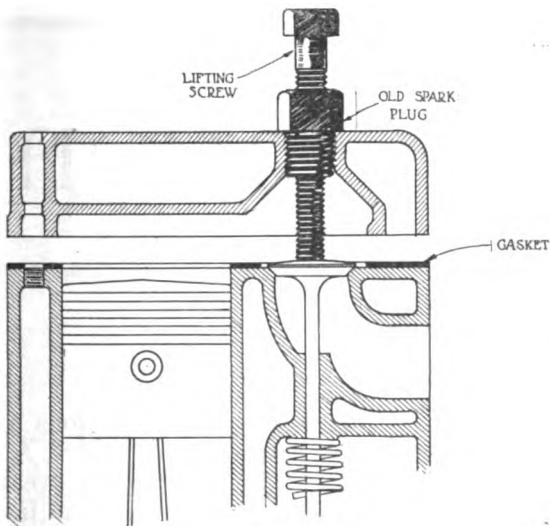
Overhead valve springs are replaced on a Grant car without removing the cylinder head by bending over the end of a piece of drill rod so that it can be inserted in the spark-plug hole in the side of the block to hold the valve up. Another piece of 3/8-in. cold-rolled steel is bent to a U-shape to straddle the stem and push the spring down so that the key can be put in the slot.—Carson Crowley, Cole Motor Sales Co., Valdosta, Ga.

## No. 1535—DRIFT FOR REPLACING BEARING CUPS

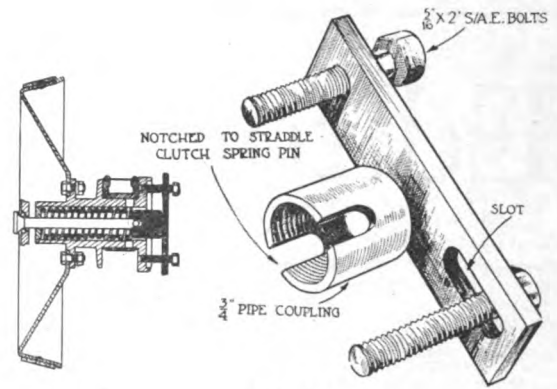
A drift for forcing bearing cups in the end plates of magnetos is made from cold-rolled steel. These bearings are insulated with fish-paper strips and washers and the drift is made with a shoulder to fit the bearing cup so as not to burr the edge.—R. J. Everest, Electric Equipment Co., Los Angeles, Cal.

## No. 1536—LIFTING DEVICE FOR FORD REAR-END

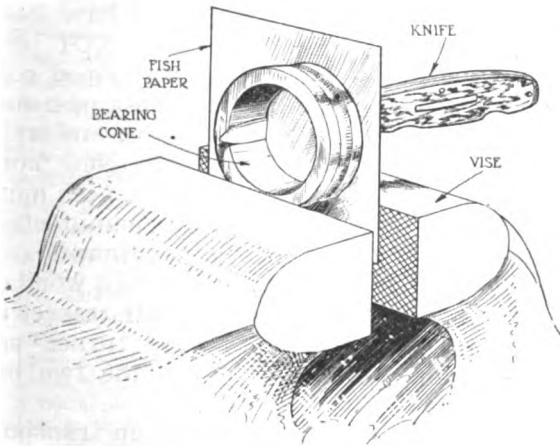
A lifting device for the rear end of Fords is made from two pieces of timber held together with a bolt. The short piece which is 2 1/2 x 3 1/2 x 22 in. goes in between the channels of the Ford frame ahead of the rear spring. Through the center of this piece is a bolt which also goes through the end of the long piece which is 3 x 4 x 66 in. This long piece comes out under the rear spring and a tackle is hooked to the outside end of it.—J. H. Herlihy, A. R. Lord & Co., Danvers, Mass.



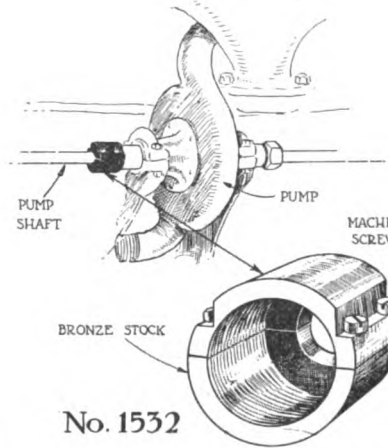
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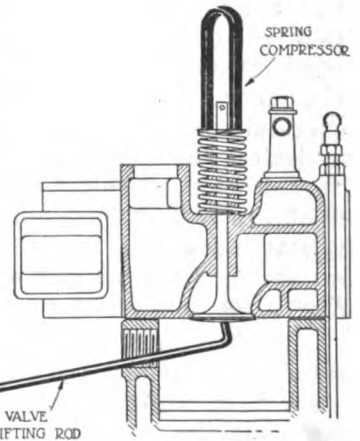
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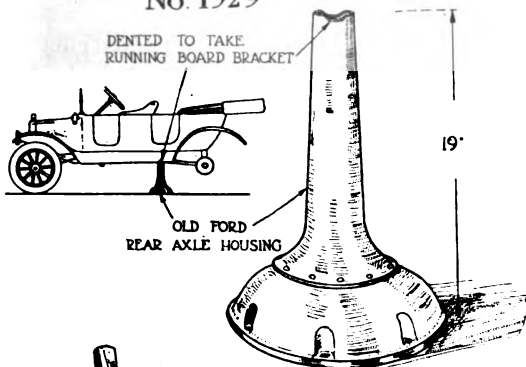
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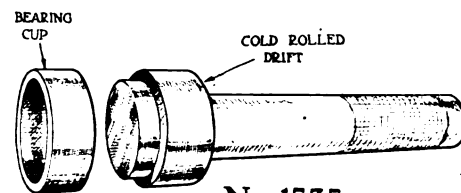
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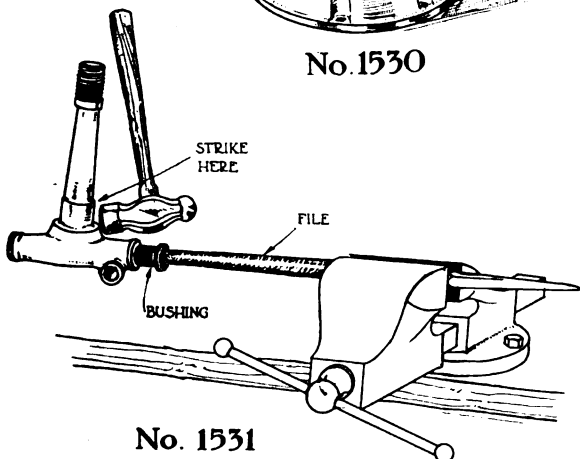
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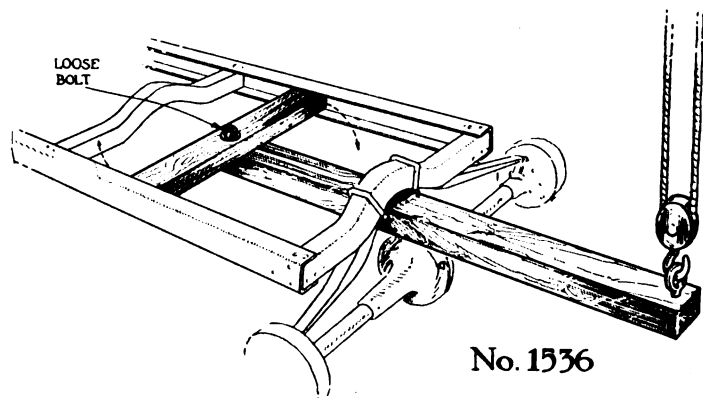
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No. 1535



No. 1531



No. 1536

# Editorial Observation

## Is It Fair?

**T**HERE has come into the MOTOR WORLD office a document at the top of which it says: "From the Committee on Public Information, Immediate Release." But at the bottom of the sheet in a less conspicuous position is: "*Duplicated and sent by National Automobile Chamber of Commerce.*"

This document is a statement against the holding of automobile expositions of any kind during the coming winter, and, seemingly, is an effort to control the affairs of the dealers. Why such a statement should not come from the National Automobile Dealers' Association, which is doing very nicely in managing its own affairs, is not explained. No mention is made of the dealers' association and there is no indication that it was even consulted before this regulation of dealer affairs was undertaken by the N. A. C. C.

The statement says the N. A. C. C. has cancelled its two shows of the coming winter at the request of the War Industries Board officials and adds:

"Going further to meet the views of the War Industries Board, the automobile industry leaders have urged promoters of local shows for automobiles, trucks or accessories to abandon all plans for such during the coming winter.

"The reason given to the industry for this action by the Automobile Chamber of Commerce is a desire to co-operate with the War Industries Board in plans for conservation of fuel, labor and transportation."

There are some statements explaining who conferred and how and at the end is a resolution adopted by the N. A. C. C. which says:

"Resolved, that for reasons expressed in the foregoing resolution, promoters of local and other shows be respectfully requested not to hold automobile, truck or accessories exhibitions during the winter of 1918-19."

In other words, the N. A. C. C., having been obliged to call off its own two shows, doesn't want anybody to hold any expositions at all.

And, naturally, it garbs the whole affair in the clothes of patriotism and is probably ready to shout "traitor" at any man who dares to take issue with the N. A. C. C.

The N. A. C. C. was obliged to call off its shows for several reasons. One reason is that the Government has taken its New York show building. Another reason is that the holding of a national show entails great freight transportation, labor and use of fuel and necessitates the traveling of thousands of men

thousands of miles, none of which conditions applies to the many dealer expositions, which the N. A. C. C. now undertakes to regulate for the above "reasons," and in which the N. A. C. C. has no financial interest.

Probably the biggest reason there is no need for national shows is that there is nothing new in passenger cars to show this year. The shows have been built upon the passenger car. They have NOT been automotive expositions. They have not helped conserve time and labor by showing business men and farmers how they might use trucks, tractors and trailers in cutting costs, labor and time. The New York and Chicago shows have, for several years, been more or less useless, and there are not a few manufacturers who would prefer to see them discontinued.

The dealer expositions, however, have been wonderful aids to progress and efficiency in their respective territories. Some manufacturers have turned entirely to the dealer shows, passing up the two big shows entirely.

Neither do the dealer expositions eat up transportation, labor and fuel as the N. A. C. C. document would have one believe.

It is questionable whether the War Industries Board has been put in possession of the real facts in the case. To the Board, shows are probably shows. Maybe it doesn't understand the benefit that comes from dealer expositions and the wonderful help they are as compared with the national expositions.

Furthermore, the business, chemical and hardware shows are being held as usual, and all over the country the county and state fairs have been run off along much the same lines as in past years. An automotive exposition is just as much an efficiency project this year as is a fair or the business, chemical and hardware shows.

Even though the War Industries Board might in the end—after being given all the facts—ask that all expositions be discontinued, it would seem that the N. A. C. C., if it wanted to operate on ethical lines, might at least have consulted the National Automobile Dealers' Association in the matter. The N. A. D. A. has from the beginning striven to co-operate with the N. A. C. C. even when certain belligerent dealers wanted to fight the factories, and the dealers' association is entitled to more consideration than this document indicates it has received.

It would seem that the N. A. C. C. has over-stepped its bounds and has been anything but fair in endeavoring to make rules for a section of the trade that it in no manner represents.



## Letters from Readers

**THIS** page is for the use of *MOTOR WORLD* readers with something to say. Letters on subjects of interest to dealers, garagemen, repairmen and jobbers are always welcome.—EDITOR.

### Can You Use Him?

Editor Motor World: I am an Englishman, 29 years of age, a public school boy (Malvern), with a fairly wide experience of the motoring business, both practically and commercially, and am now anxious to become identified with a large American automobile concern in post-war days, either on the representative staff or at the works. My own point of view is that I would be of some use to such a concern out East.

Thus I am requesting your kind offices in putting me in touch with such concerns as you, with your close connection with them, think fit.

My experience is as follows:

- (1) Messrs. Daimler Motor Co., Ltd., Coventry, England  
5 years—pupilship, works, and drawing office.
- (2) Messrs. Arrol-Johnston, Ltd., Paisley and Dumfries, N. B.  
3 years sales department.  
(Tours to West and South Africa.)
- (3) Messrs. Speyer & Co., Calcutta, India.  
(Distributors of Hupmobile cars in India.)  
2 years, sales.
- (4) Messrs. G. McKenzie & Co., Ltd., Rangoon, Burma (Burma house of above concern).  
1 year, sales.

I then left to take up military service,

where I am now, as a lieutenant in the Mechanical Transport on the northwest frontier.

I speak, read and write Hindustani, speak Burmese and Bengalese, and from a motoring point of view know my East thoroughly.

If desired, I could send a photograph and fuller information.—A. Noel Youett, Lieut., M. T., Central Mechanical Transport, S. Depot, Rawalpindi, Punjab, India.

P. S.—My own experience of the automobile representatives out East is that they arrive out here not knowing the Eastern circumstances, or even the language; thus they never know, or even see, the country; they merely live as tourists in hotels in the large cities. There is a far wider scope for the automobile business in the untouched territories of the East. For instance, there is far more wealth and motoring possibilities in the native states than in the cities. In Kashmir alone there are more cars than in Delhi, the capital, yet there is no established means of getting in touch with the actual buyers; the cars in question are mainly bought from dealers in Calcutta or Bombay (a week's journey by mail train).

If a representative established connections and supported a dealer, the results would warrant any efforts in this direction.

### A Patriotic Parade

Editor Motor World: One way of establishing stability of labor is to make the employees feel proud of the plant



### Our Gasoline Girl

Editor Motor World: Thought that you might be interested in the enclosed photograph of Gene Viens, our gasoline and oil girl.

This girl has been on the job for about 2½ months, and we have noticed a very appreciable increase in gasoline and oil sales, and she is altogether handling the job in a most satisfactory manner.

All of our customers seem to like the idea of being treated in such a courteous and polite manner, and this innovation, which is entirely new in Norwich, is creating a great deal of favorable publicity.—Baird Tire & Supply Co., W. R. Baird, President, Norwich, Conn.

with which they are associated. At the present time the spirit of patriotism is very strong and any demonstration along that line, particularly when participated in by the employee, serves to increase a personal interest in the plant which employs him.

We recently had a very attractive float in a big patriotic parade, and it occurred to us that a picture of it might be a worth-while suggestion to other manufacturers or employers of labor.—The Berger Mfg. Co., R. M. Nicholson, Advertising Manager, Canton, Ohio.

### Standard of Service

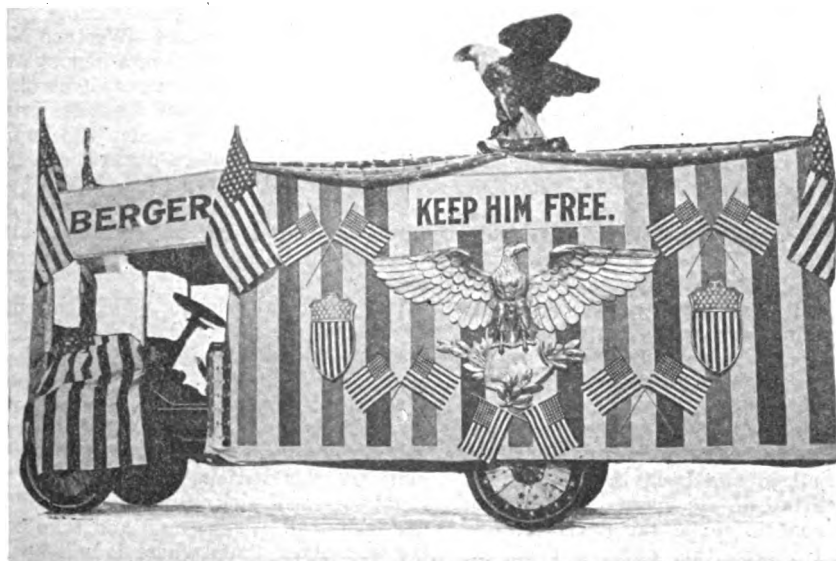
Editor Motor World: Following is a letter we are sending to our patrons and a copy of our standard of service:

To our Patrons:

Inclosed please find copy of Standard of Service effective in our Electric Garage, Sept. 1, 1918.

Increased cost of labor, together with the advance of materials and the demands of those in our employ, make these changes absolutely imperative.

Up to the present time our men have been forced to work twelve hours a day three hundred and sixty-five days a year. With the shortage of labor, the high salaries and short hours offered our employees by various industries, it is necessary at this



The attractive float shown in the picture was designed and built by the employees of the Berger Mfg. Co., which entered it in the huge Fourth of July parade held in Canton, Ohio. Public opinion, as judged by the applause, awarded this float first honor

time to grant our men their requests and continue to furnish our customers with the high-grade service to which they have been accustomed.

Thanking you for your past co-operation, and knowing you will continue to give us your appreciated support during these critical times, I beg to remain—Yours truly, Robt. Beard, Chicago.

#### STANDARD OF SERVICE ELECTRIC GARAGES

Effective Sept. 1, 1918

This Standard of Service, effective in electric garages in Chicago, is adopted with a view to the proper maintenance of electric vehicles that may assure the owners maximum service and satisfactory results, and also to co-operate with the United States Government in the conservation of labor and in the elimination of unessential things. Our standardized service will consist of the following operations:

1. Storage, washing and cleaning.
2. No washing, polishing or cleaning on Sunday nights.
3. Chains put on at customer's request at garage **ONLY**.
4. Charging and flushing batteries by competent battery men, using the standard hydrometer gravity test.
5. Calling for and delivering car once every twenty-four hours, excepting between 12 noon and 1 p. m., between 6 and 7 p. m., and 12 noon and 7 p. m. Sundays and legal holidays. Three hours' notice required for delivery on Sundays and holidays.
6. Tires to be inflated once each week.
7. Cars to be delivered and called for at **OWNER'S RISK**.

#### RATES

Standard service for all cars per month .....	\$40.00
No allowance for absence unless car is out of garage ten consecutive days.	

#### EXTRAS

Changing pneumatic tires in garage .....	\$1.00
Oiling, greasing, adjusting and repairing will be charged for—labor per hour plus cost of material....	1.25
Dead storage without battery, per month .....	10.00
Dead storage with battery, per month .....	15.00

#### TRANSIENTS

Charging batteries during day.....	\$1.00
Charging batteries during night....	1.50
Wash, charge, polish and storage..	2.50

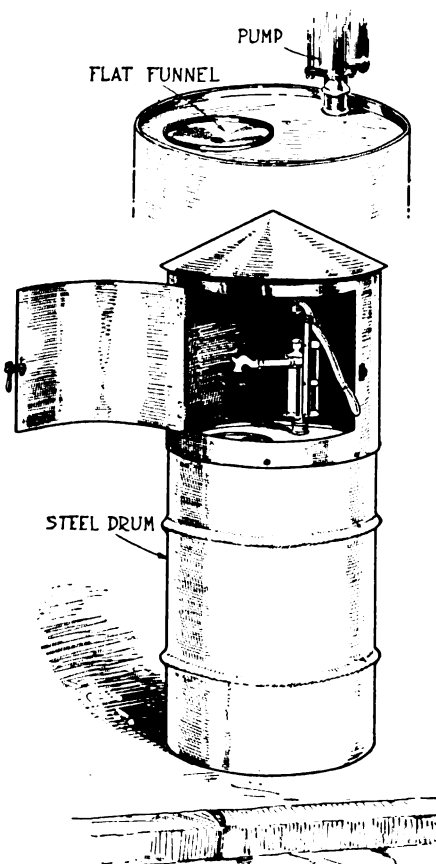
### Monroe Differential Case

Editor Motor World: We are writing to you in hopes that you may be able to help us find a No. 23,099 differential case for a Monroe Speedster Model 16, Serial No. 3261 with a Walker Weiss rear axle. We have tried the Monroe Motor Co., Pontiac, Mich., the Walker Weiss Co., Flint, Mich., and the Puritan Machine Co. of Detroit and they all referred us to William Small Co., Indianapolis, which company can neither make shipment nor promise one. This car has been held up for nearly three months on this account and we would be very grateful to you if you could help us find this part. Thanking you in advance we are, Kendallville Auto Sales Co., Kendallville, Ind.

### Our Reggament

Editor Motor World: Enclosed please find a copy of one of the many original little poems that the many trials of our present duties are responsible for.

I took great pleasure in reading an



An oil pump placed close to the gasoline filling outfit brings L. H. Meckstroth of New Knoxville, Ohio, many oil sales that he might otherwise miss.

### Stimulating Oil Sales

**T**O sell a customer something that he asks for is simply order taking. To sell him something that he needs but does not ask for is salesmanship. To sell him something that he does not need is a mistake.

Generally when a motorist comes to the garage to get gasoline he intends to purchase that commodity alone. But in many cases he also needs small quantities of oil and profits can be swelled to a considerable extent if a sale of oil is attempted with every sale of gasoline. The main thing is to have the oil handy and not have to run inside the garage to get it.

L. H. Meckstroth, New Knoxville, Ohio, has worked out this theory very satisfactorily. He says, "I find that the average person that buys gasoline at a garage will also buy a quart or two of oil, providing it is suggested to him and that it is easy to get. In 75 out of 100 cases oil can be sold in this way."

"I took a 50-gal. drum, made a hole for the pipe of a pitcher pump and another hole for a flat funnel to allow the surplus oil to run back into the drum. Over the top of the drum I put a hood with a roof to make the device waterproof. I placed this outfit out on the pavement beside my gasoline curb pump, and it is surprising the amount of oil I am selling. The whole outfit only cost me about \$6.50."

issue of your valuable paper in one of the Y. M. C. A. huts here recently, and if you should consider the enclosed of sufficient value as "copy" for your columns I am enclosing my best wishes to the many members of the "trade" that I had the pleasure of meeting during my travels over most of the United States as a representative of the Champion Spark Plug Co., Toledo, prior to my enlistment last fall in the Twenty-third Engineers.

With best wishes for your continued success, I beg to remain.—Fred A. Dowling, Company D, Twenty-third Engineers, Care Director C. & F., A. P. O. 717, A. E. F.

#### OUR REGGAMENT

Had a Major was a loyer, and a Lute that was a Bloke,  
Wat toted dynamite around an' blew bridges up in smoke;  
The Captains they wuz "L" road guards an' football stars an' such,  
As peddled real estate to boobs wat never would know much;  
An' the Curnel, he came from the Point, an' later was a Scribe,  
An' the Band Conductor he came from some wild Egyptian tribe;  
The Adjutant raised dogs and hell, and knew the latest fads  
In wimmin's lingerie and stuff, frum writin' all their ads.  
An' then the Lutes wuz everything from Movie Stars to Mayor,  
An' three cum frum the Regellers and two o' them wuz fair.  
The Personnel was rah rah boys, and lots of other guys  
Like what hang around election time to vote agin the Drys;  
An' sum wuz travellin' salesmen, and sum wuz poolroom sharks,  
An' sum just saved their room rent by sleeping in the Parks;  
An' sum wuz he-stenographers, a few wuz Engineers,  
A lot wuz foot-rall polishers an' free-lunch connoiseurs;  
Sum slung hash and biskits, an' them not broke wuz bent—  
But, take 'em all together, they're a dam fine reggament.

#### Truck Lines For Western New York

ROCHESTER, Sept. 14—Western New York may soon be enjoying a new system of trucking under government control, to be known as the motor Vehicle Truck Service, which will be under the supervision of the post-office department.

Local postal authorities have been asked to map out about seven or eight tentative routes of about fifty miles length each, and the service is expected soon to be in operation.

The principal use to which the new service will be put is the distribution of farm produce. The produce to be handled will be classified in the same manner as parcel post and the trucks will be rated as mail trucks. Their drivers will be equipped with scales and, stopping at the various farms along the route they will pick up whatever produce the farmer desires to mail and take it to the post-office, from where it will be delivered to the consignee.

The plan of operation calls for trucks to start from two terminals of the route at the same time.

# The RETAIL NEWS

## SOUTHWEST

J. N. Arthur, Atchison, Kan., has moved his service and salesrooms to the Effingham Building.

Burchinal & Chitwood, Conway Springs, Kan., Overland automobile and Avery tractor dealers, have moved to the Hyatt building.

The Hesse Motor Co., Leavenworth, Kan., Otto Hesse, proprietor, has opened its new garage.

Elmer Grimman, Mount Hope, Kan., has bought the interests of C. A. Pearce in the Pearce Garage.

A. Bernard, Norton, Kan., formerly Colorado Springs, has bought Copes' Garage.

John Lloyd, Smith Center, Kan., formerly of Athol, has bought the garage business of Art F. Tucker.

R. C. Gilmer, Thayer, Kan., has bought Harry Wells' interest in the O. I. Belt Garage.

W. H. Trefry, Topeka, Kan., Ford dealer, has turned his business over to his manager, J. C. Rex.

Robert A. Hohmann, Canton, Mo., tire supplies, is retiring from business.

Clarence Haskins, Canton, Mo., succeeds Simpson & Goetz in the supply business.

The Biggs Electric Company, Craig, Mo., has been organized by Otis Biggs & Son of Craig, C. R. Speelman of St. Joseph and C. D. Speelman of Kansas City, for Exide battery service, electrical service and electrical supplies.

Clarence Hearst, Elvins, Mo., has bought the interest of his partner in the Busy Bee Auto Repairshop.

William Palmer, Lexington, Mo., is now sole proprietor of Palmer's Garage and Machine Shop.

J. E. Scobey and J. F. A. Casey, Kansas City, Mo., have opened salesrooms at 182 McGee Street, for Sayers and Scoville cars.

Joseph Anderson, Nevada, Mo., has bought the Willard battery station.

H. L. Dial, New Franklin, Mo., has opened a vulcanizing shop.

The Bates County Motor Co., Rich Hill, Mo., has bought the garage and battery business of Joseph Anderson, now of Nevada, Mo.

J. S. Rankin, Warrensburg, Mo., will rebuild his garage recently destroyed by fire.

Pascoe & Seybert, Crescent, Okla., are successors to J. R. Willson as owners of the People's Garage.

Phil Trabant, Guthrie, Okla., dealer and repairshop proprietor, will quit business.

The Southwest Nash Motor Co., Oklahoma City, Okla., headquarters Kansas City, has opened its branch here at 26-28 West Fourth Street.

John Talley, Purcell, Okla., is now sole owner of the City Garage, having bought the interest of O. B. Fox of the Fox Hardware Co. Mr. Talley has been operating the garage.

The Western Supply Co., Tulsa, Okla., has been reorganized.

The R. M. Purdy Motor Co., Tulsa, Okla., will open a second store for handling oils and accessories.

J. L. Foster, Yeager, Okla., formerly Wetumka, has bought the local garage.

The Ford Service Station, Wetumka, Okla., has moved to larger quarters.

J. F. Murr, Amarillo, Tex., has bought an interest in the Auto Exchange, with Jack Bumpas.

R. K. Willis, Crockett, Tex., has moved his vulcanizing plant to the B. J. Mincher Garage.

The Jackson Street Garage, Dallas, Tex., has opened in its new building. Z. W. Miller is manager.

The Central Garage, Huntsville, Tex., E. H. Robinson, manager, has opened.

W. H. Scott, Oglesby, Tex., has bought the garage and blacksmith shop of W. H. Jones.

The United States Vulcanizer Co., Waco, Tex., operating in six states, has opened its branch here, the seventeenth.

Arthur J. Crow, Waco, Tex., has bought the Austin Avenue Garage from Frank Jackson. He will deal in accessories and oils.

R. Gaiser, Fort Smith, Ark., formerly of Anderson, Ind., has opened a repairshop at 19 North Seventh Street.

E. M. Parlin, Little Rock, Ark., has secured the Camelford agency for Little Rock and Pulaski county.

The Barnard Auto Supply Co., Texarkana, Ark., has moved to larger quarters.

Weaver Motor Co., Leavenworth, Kan., has bought the garage of the Butler Motor Co.

Frisbie Auto Co., Topeka, Kan., has added a battery department.

A. E. Mayhew & Son, Atchison, Kan., have moved into a new garage.

F. H. Arnold, Atchison, Kan., has opened a tire and repairshop under the firm name of the K. T. Tire Co.

The Stout Electric Co., Atchison, Kan., has taken the Exide battery agency and opened a repairshop.

W. S. Baker, Tekamah, Neb., has bought the garage of C. A. Smith.

C. C. Gerber, Atchison, Kan., Willard battery service, is moving into a new building at 106 South Seventh Street.

A. E. Werkert, Leavenworth, Kan., has closed his garage for the duration of the war and gone into the service.

William Dunkel, Atchison, Kan., has taken the Chevrolet agency and opened a salesroom at 825 Commercial Street.

Charles Neillander, Atchison, Kan., has sold the Atchison Tire & Rubber Co. to Dr. W. A. McKelvey and has joined the colors.

C. C. Claudy and Charles Jasschke, Topeka, Kan., have opened a new tire store and will do business under the style of the J. C. Tire Shop.

Keele, "The Battery Man," has opened a new battery service station at Manhattan, Kan.

Draper & Gardner have leased the repairshop of the Saunders Motor Co., Holton, Kan.

J. S. Blake and H. E. Christoffel have opened a repairshop at Holton, Kan.

The Southwest Nash Motor Co., St. Louis, has opened salesrooms at 3205 Locust Street. The company was organized by H. H. Quigley of the Nash organization in Chicago, to take over the wholesale and retail Nash car and truck business in St. Louis. F. M. Webb of the Oakland organization in Philadelphia is assistant manager. The Nash Auto Sales Co., formerly the retail repre-

sentative, has been changed to Barth Motor Co., and will concentrate on the King car, which was handled with the Nash.

The Lee Tire & Rubber Co., St. Louis, has discontinued the factory branch here, leaving the wholesale business to the Bittel-Leftwich Co. O. S. Johnson, branch manager, who goes to the home office, said that the factory was unable to continue satisfactory stock in St. Louis for a branch.

## PACIFIC COAST

C. A. Kintz, Tacoma, Wash., Dodge specialist, has opened a service station at 2524-26 South E Street.

Charles H. Culp has secured the agency for the Dodge car and has opened the Peninsula Garage and Machine Shop at Munras and Fremont Streets, Monterey, Cal.

The California Tire & Rubber Co. has moved from Golden Gate Avenue to larger quarters, 895 Post Street, San Francisco.

The Cut Rate Rubber Co. has opened a tire store and vulcanizing shop at 435 Golden Gate Avenue, San Francisco.

G. W. Hyson has purchased an interest in the Upper Fruitvale Garage, 3525 Fruitvale Avenue, Oakland, Cal., thereby associating with C. B. Smith.

Silverthorn & Snock have opened at 1235 Van Ness Avenue, San Francisco, and will distribute Tropical tires.

George H. Aylworth has opened a garage under the name of Home Auto Storage at 317 Broadway, Redwood City, Cal.

Decota Brothers have opened a repairshop at 435 Gough Street, San Francisco.

C. W. Eichbaum has disposed of his interest in the Junction Garage, on Valencia Street, San Francisco, and assumed personal management of the Market Street Garage.

The Great Tire Co., of New York City, has been authorized to do business in Texas; it will have its principal office at Dallas.

Standard Tire & Supply Co., Portland, has recently established a modern tire and tube sales and service depot at 84 Sixth Street.

The Fashion Garage, Tenth and Taylor Streets, Portland, has recently completed construction of an addition to its garage 100 x 50 ft. A modern repair and construction shop has been added.

John F. Rose, Portland, has been appointed agent in Portland for the United States tires, and has opened a salesroom and service station at 84 Sixth Street.

C. L. Collingham and G. C. Cole of "The Auto Repair and Up Keep Service" have moved into their new garage at 6017 Santa Monica Boulevard, Hollywood, Cal.

Fred E. Sockman is the successor of Bennett & Deets of the Glendora Garage, Glendora, Cal.

R. J. Hayes has opened a tire shop at Glendora, Cal., styled Modern Vulcanizing Co.

Francis C. Davidson, proprietor of the Wall Street Garage, has recently moved to new quarters at 1210 South Hope Street, Los Angeles.

## MIDDLE WEST

The Portage Tire Corp., Grand Rapids, Mich., has been formed for the purpose of handling Portage tires in western Michigan and giving tire sales service. A new salesroom has been opened at 232 Michigan Street, southwest.

The Biegeck Tire & Repair Co., Berlin, Wis., intends to retire from business, Walter Biegeck having answered the call to the colors and E. F. Biegeck being subject to call within a short time. The firm started business early this year.

**Bert Rogers**, Bloomington, Ill., has opened a garage at 409 North Center Street and will specialize in repair business.

**W. R. Johnson** and **O. L. Weaver**, Heyworth, Ill., have opened a new garage, the former as manager and the latter in charge of the storage and repair department. The firm will be distributor for the Ford car and Fordson tractor in its territory. A new building has just been completed to house the business. A line of accessories will be carried.

**John Broadhead**, president of the Overland-Broadhead Co., Springfield, Ill., has leased the garage building at 321 South Fourth Street. The structure will be occupied as a used car department. The former plant at 422-426 South Fourth Street and the service station at 413-417 South Fourth Street will be operated as in the past. G. A. McLoney has been appointed manager of the used car branch.

**The Alpena Auto Co.**, Alpena, Mich., has moved from Shisholm Street to larger quarters in the Reynolds Building, on Water Street. The company is distributor for the Dort.

**The Overland Garage**, Alpena, Mich., owned by M. Wright and G. Broad, has moved into the building formerly occupied by the Michigan Laundry at Third and River streets. The new quarters are twice as large as the old Overland home.

**Peter Wood**, St. Clair, Mich., has taken over the agency for the Overland, which was formerly distributed by Glen L. Sampel.

**The Edward Christoph Garage**, Waukesha, Wis., was damaged to the extent of \$5,000 or more by fire on Aug. 28. Repairs will be made at once.

**James McGrath**, Wenona, Ill., has purchased from C. A. Axline the Wenona Garage building and contents.

**The I. J. Cooper Rubber Co.**, Cincinnati, has bought the accessory business of the Os-kamp Auto Supply Co., which retains the magneto repair business. The same company during the past week has bought the business of the Mason Tire Co., at 298 East Eighth Street.

#### New Garages

Gowalock & Allen.....Peoria, Ill.  
Board of Trade Garage.....Chicago  
Roman Garage.....Chicago  
Auto Sales and Garage.....Chicago  
J. E. Ryal.....Peoria, Ill.

#### NORTHWEST

**P. H. Donovan**, Belle Plaine, Minn., bought the garage of A. Spettstoesser.

**Victor Johnson**, Oswego, Mont., lost his garage and 16 cars and large accessory and parts stock by fire.

**A. H. Welchlin**, Fairmont, Minn., bought the interest of his partner, T. J. Derby, in Welchlin & Derby, automobiles.

**Brines & Sedan**, Rushmore, Minn., is a new garage firm.

**J. B. Buckler**, Omaha, Neb., has opened a tire rebuilding shop at 2411 North Twenty-fourth Street.

**J. N. Robinson** has sold his interest in the Jack-Pott Motor Co., Emmet, Kan., and joined the colors.

**The Sioux City Tire Co.** has opened a branch depot and warehouse at 214 South Eighteenth Street, Omaha, Neb.

#### New Garages

Coulter Motor Co.....Alexander, N. D.  
Frank Westergreen (tire shop).....  
Fessenden, N. D.  
Ernest Lindass.....Mayville, N. D.

Papke & Ginther.....Hettinger, N. D.  
King & Perry (repairshop)....Calvin, N. D.  
Coulter Motor Co.....Alexander, N. D.  
L. L. Wolfer (supplies)....Jamestown, N. D.  
William Nott .....Crosby, N. D.  
G. & J. Kerr.....Doland, S. D.  
King-Bruns Auto Co.....McHenry, N. D.  
Motor Inn .....Churchs Ferry, N. D.  
S. J. Bruce.....Cleveland, N. D.  
E. P. Fitzgerald.....Yankton, S. D.  
H. E. Sprague (repairshop).....Gully, Minn.  
Standard Oil Co. (filling station).....

Winona, Minn.

P. J. Gregerson.....Little Falls, Minn.  
Tessier & Gothier (repairshop).....

Red Lake Falls, Minn.

Lynch & Co. (repairshop).....Wheaton, Minn.  
Merriem & Christensen (repairshop).....

Albert Lea, Minn.

J. F. Barnes.....Blue Earth, Minn.  
West Concord Garage Co.....

West Concord, Minn.

Marcus L. Fay.....Duluth, Minn.  
Robert Kaping (repairshop).....Humboldt, Minn.

Kimball & James.....Long Prairie, Minn.  
Yale Realty Co. (addition).....

Minneapolis, Minn.

R. B. Lobdell (tire shop).....Belgrade, Mont.  
Webbler Bros. ....Sidney, Mont.

Fred Fast (tire shop).....Polson, Mont.  
Montana Oil Co. (station).....

Columbia Falls, Mont.

H. C. Eversmeyer (tire shop).....Chester, Mont.

#### EAST

##### New Garages

James Gallagher (brick, 21x40,  
\$6,800) .....Philadelphia  
J. E. Poorman (brick, \$1,750)....Philadelphia  
Thomas Kane .....Philadelphia  
John Marisolino .....Philadelphia  
John and Michael DePaul (stone,  
40x57, \$3,000).....Philadelphia  
Atlantic Fuel Co. (\$7,500).....Philadelphia  
J. W. Vandergrift (\$3,500).....Philadelphia  
E. Brugatis (cost \$3,000; 30 x 57),  
Philadelphia

Joseph A. Browne (cost \$7,000; 45 x 42),  
Philadelphia

John F. Gelger (cost \$3,000)....Philadelphia  
Robert Killough (\$1,000).....Philadelphia  
Brown Construction Co. (cost \$1,200),  
Philadelphia

Northern Liberties Realty Co. (100 x 178),  
Philadelphia

John H. Frick (50 x 18; cost \$1,200),  
Philadelphia

Edward Kagerman (addition).....Philadelphia  
A. H. Nagorski (70 x 20).....Philadelphia

**The Jensen Battery Service**, 329 Church Street, Hartford, Conn., has secured new quarters at 257-259 High Street and will take possession September 1.

**The Foss-Hughes Co.**, Wilmington, Del., is developing its Wilmington branch. It has fitted up a fine office at 223 East Fourth Street, which is just around the corner from its garage, which is located at 403 Walnut Street, and adjoins it in the rear. Soon, however, the company will occupy a fine new building, which is being erected at Tenth and French Streets.

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line truck line for the states of Washington, Idaho, British Columbia and Northern California.

**Case Auto Sales Co.**, Tacoma, Wash., have been named as district distributors for Columbia motor trucks.

**The Owen Graham-Starkweather Co.**, Detroit, distributor of G. M. C. trucks and Buick cars, has added the Highway trailer to its line, manufactured by the Highway Trailer Co., Edgerton, Wis. They come in sizes from those designed for Fords to the greatest capacities and in both two and four-wheel types.

**The Wolfley Auto Co.**, Mitchell distributor, and dealer at St. Joseph, Mo., Hiawatha, Kansas, and Falls City, Neb., has been appointed distributor for the Fulton truck in Kansas, Western Missouri, Oklahoma and Southeastern Nebraska. Headquarters for truck distribution will be maintained at Kansas City, where parts supply and service station is being installed at 1809-11 McGee Street. Truck service stations will also be established at the company's other places.

**H. J. Koehler Motors Corp.**, Newark, N. J., has appointed the Mid-West Truck & Tractor Co., Omaha, Neb., as its agent. Martin Loftsgardon (Chandler),

Madison, Wis.

**Rummele Auto Co.** (Dodge Bros.), Sheboygan, Wis.

**Pioneer Auto Co.**, Seattle, has recently taken over the agency for the Columbia truck line for western Washington. The company now handles Case Six.

**D. A. Hawkins**, Atlanta, of the Hawkins-Russell Co., has taken on the distribution of the Acason, and is opening a large salesroom on Ivy Street.

**The Standard Truck** has been taken on by the following dealers and distributors: Fanning-Mathis Co., Philadelphia; Herman Bartsch Co., Newark, N. J., and Genereux & Co., New York City.

**The Worman Motor Car Co.**, Toledo, has been made distributor for the G. M. C. truck in northern Ohio. A service station equipped with all G. M. C. parts is being established.

**The Becker Auto Co.**, Grand Rapids, Mich., is to handle the output of the western half of Michigan for the Republic. The company will take over more than a dozen direct contracts that heretofore have been handled by the factory. A large stock of repair parts will be carried, as well as a complete stock of trucks, bodies, etc.

**The Minneapolis Steel & Machinery Co.**, manufacturers of "Twin City" tractors, have established a direct factory branch in Spokane, Wash., taking over the "Twin City" tractor business of the Sieler Machinery Co., which has handled the line in the Inland Empire for three years. The Spokane branch will be in charge of Paul E. Lattner.

**Guy Motor Sales Co.**, Everett, has taken the agency of the Garford truck line.

**Vernon A. Smith**, president of the Vernon A. Smith Motor Car Co., Seattle, has entered the National Army and has gone to Camp Lewis. Smith will retain his present interest and position with the company, and H. F. McRae will take charge as sales manager. The company handles Diamond T trucks on the Pacific Coast.

**L. A. Hubbs**, sales manager of the Franklin-Wicks Co., Seattle, has resigned to enter the National Army.

**F. H. Hanson**, manager of the Seattle branch of the Splittorf Electrical Co., Seattle, has gone to Camp Lewis cantonment near Tacoma.

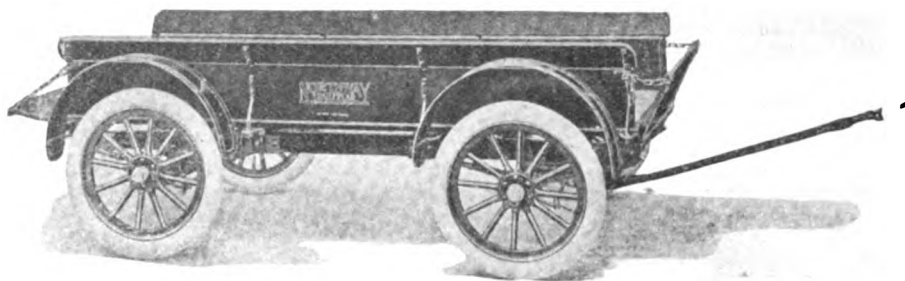
**J. M. Thornton**, Seattle, has been appointed head of the truck department of the Hainsworth Motor Co., Seattle.



# Automotive Equipment

## NORTHWAY TRAILER CAR

A trailer for use with light trucks and passenger cars. Model 20 has a capacity of 1 ton and weighs 730 lb. Model 14 has a capacity of 1400 lb. and weighs 570 lb. Both trailers are 9 ft. long, 37 in. wide and 10 in. deep, inside measurements, with 5-in. flareboards on each side. A special universal joint forms the coupling. The trailers are shipped knocked down and come with special attachments for car and truck coupling. Prices, model 20, \$270; model 14, \$215.—Northway Trallercar Co., Rochester, N. Y.



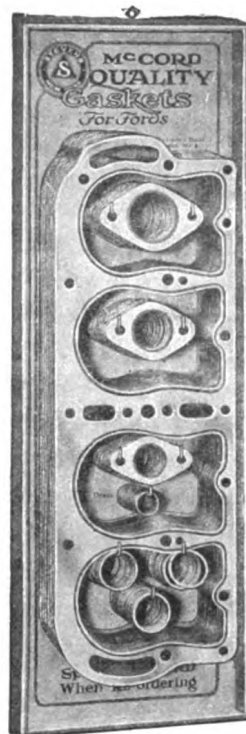
## LOVEJOY AUTOMATIC GARAGE DOOR OPENER

An automatic garage door opener that opens the door by means of an electric motor and closes it by gravity. Rope pulls placed inside and outside the door, at points where they can be reached by the driver without his leaving his seat, operate the mechanism. The device is suitable for either doors that slide up and down or those that roll sidewise. The machine consists of the motor with the necessary accessories, and it is started by pulling the rope. The

door, which is counterweighted, is raised to the required height when a stop shuts off the current, and the door is held in this position till the cord is pulled again, when the door closes by gravity against the action of a brake which keeps it under control. Price \$175.—Lovejoy Automatic Door Opener Co., Laramie, Wyo.

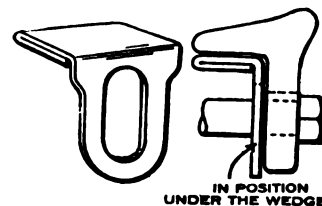
## MCCORD GASKET BOARD

A display board which holds 25 complete sets of McCord gaskets for Fords. Each set is plainly lettered on buff-coated board with accurate outline drawings. Price, \$13.—Stevens & Co., 375 Broadway, New York City.



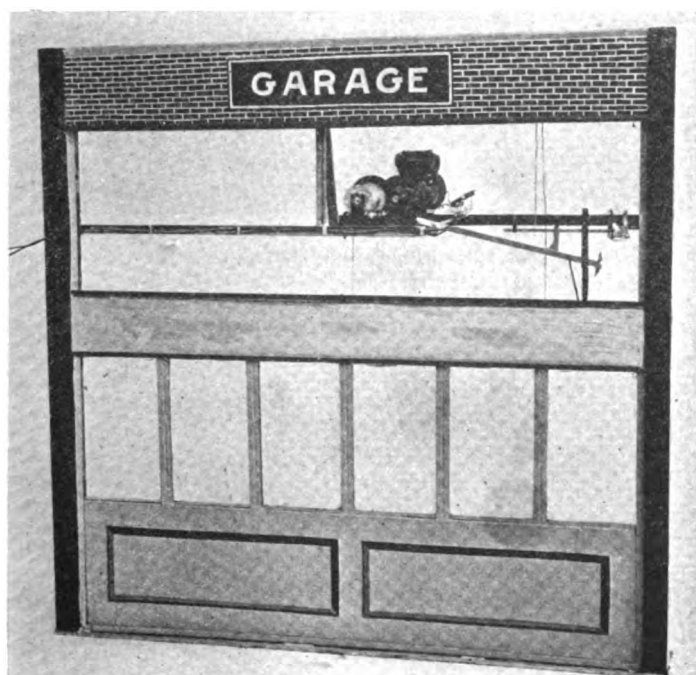
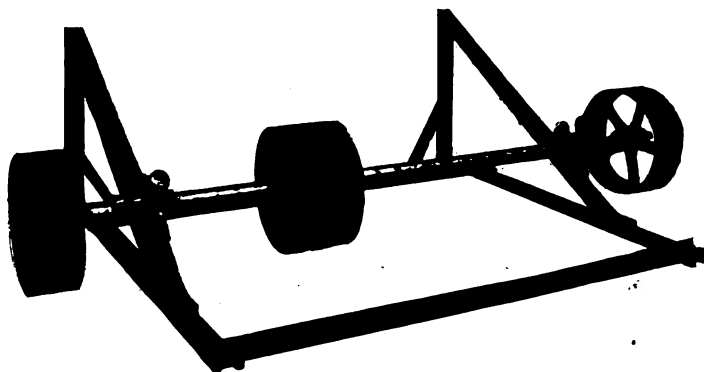
## DEMOUNTABLE-RIM WEDGES

These are wedges intended to be used with worn lugs, and stretched or worn rims, and by taking up the looseness prevent squeaks. They are made of sheet metal, are easily applied, and are permanent. Packed 20 in a box. Price, \$1.—Alliance Supply Mfg. Co., Alliance, Ohio.



## THE POWERMAKER

This is a device for utilizing the power of the Ford, Dodge or other light car for driving a belt for power purposes. The rear wheels rest against the driving pulleys by gravity and the power is taken from the central belt pulley. Weight about 100 lbs. Price, \$37.50, f.o.b. Detroit.—Powermaker Co., 21 West Sixty-second Street, New York City.



## TRACTORS WERE THERE—AT THE INDIANA FAIR



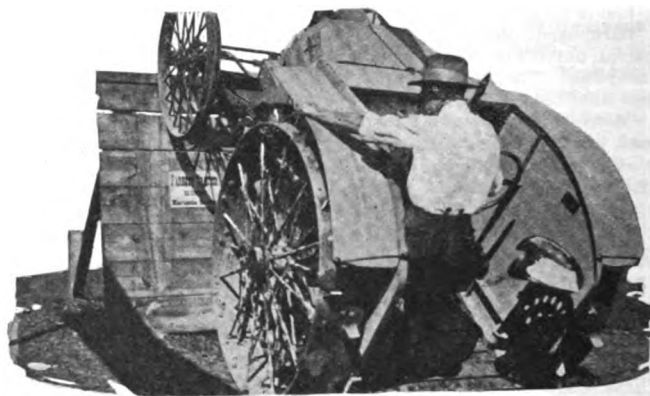
*Down tractor row toward the automobile tent*



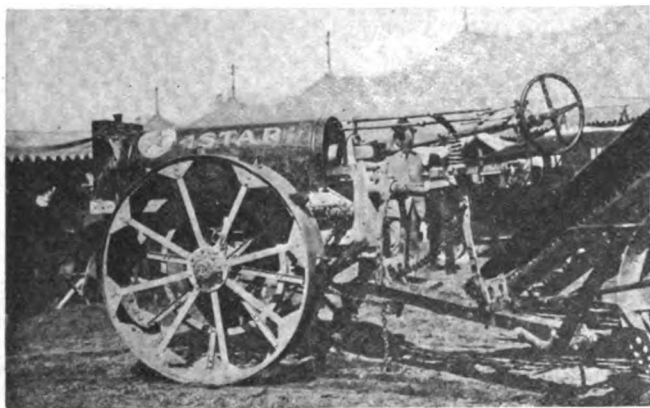
*Entrance to automobile display tent*



*Demonstrating flexibility*



*The Parrett climbs a wall*



*The Whitney—Not often seen at shows*



*A close-up of the Star*



*The Besser—A new one*



*Among the tractors*

# Have You Joined the National Automobile Dealers' Association?

(Continued from page 11)

George W. Browne, first president of the National association, and chairman of the committee of the Milwaukee association in charge of the dinner and meeting, acted as toastmaster. Short talks were made by Alfred Reeke, state director of war conservation, and A. J. March, president of the Milwaukee association.

Following the dinner, the entire party of dealers and other guests traveled out to State Fair Park in West Allis to inspect the N. A. D. A.'s annual fall exposition.

## Do It This Way

ST. LOUIS, Sept. 16.—The Overland Automobile Co. of this city, in a recent letter on trade subjects to its dealers, added this paragraph:

"The National Automobile Dealers' Association is representing you at Washington and if you are not now a member of this association we would urge that you fill out the enclosed blank and attach your check for dues, forwarding the same to the Secretary of the National Automobile Dealers' Association, 3530 Lindell Boulevard, St. Louis."

## Montana Organizes for N.A.D.A.

Editor Motor World: I have been making a tour of Montana in the interests of the National Automobile Dealers' Association and the War Conservation Program, as applied to the automobile industry. I have been working through the Minneapolis Automobile Trade Association and take pleasure in forwarding to you an account of my work in Montana, which I hope you will publish in the next issue of the Motor World.—  
HARVEY S. HAYNES, Billings, Mont.

### What Haynes Has Done

In every Montana town visited dealers have signed resolutions and nearly all who are eligible have taken N. A. D. A. memberships. In many Montana cities where no previous automobile dealers' organizations existed permanent dealers' associations have been perfected and left in a healthy working condition.

At Great Falls there is one of the strongest dealers' organizations in the state. This entire membership came into the N. A. D. A. in a body, all signed resolutions for future regulations of their business as outlined by the Conservation Division of the War Industries Board.

At Helena, Missoula, Butte, Anaconda, Deer Lodge, Havre, Lewistown, Livingston, Dillon, Bozeman, Big Timber, Columbus, Red Lodge, Billings and many other towns, all dealers and allied concerns have responded liberally and loyally. Several other towns have come in on the new plans which many of the dealers can readily see are going to mean the actual saving of their business in these times of stress.

One feature alone in the war conservation program will save hundreds of dealers from financial ruin. Since this agitation has started many have gone on a cash basis voluntarily, and beat the N. A. D. A. to it.

A man at Anaconda related his experience. He sent a collector out one day with \$1,500 of accounts. This man worked hard all day and used a car. He came back with \$75 and a full report on all of his collections. Two of his collections amounted to nearly \$60. These two men were perfectly good and could have just as well paid cash. This collector was a good mechanic and his time was worth from \$6 to \$9 in necessary tractor work.

Please note the loss in the man's time, the loss of several of the accounts, the use of a car for a day with its consumption of gasoline and oil, and only \$15 of hard collections gotten in. Does a cash basis look good to that man?

A dealer at Deer Lodge, a bright, active young chap with excellent business judgment, noticed a year ago that his credit extensions were rapidly bringing him to a point where his competitor would remark: "He was a good fellow, but no business man."

Just a year ago he saw the necessity of a cash basis and adopted it point blank, consulting no man. Some competitor said: "It won't work," but it did work. His business, instead of falling off, began to increase until to-day he is in excellent shape financially, owes no bills and gets cash for everything he sells or repairs.

There is no argument. To-day the cash system is the only safeguard against financial ruin, without the installation of a credit system requiring a credit man who devotes his entire time to credits. This very few automobile concerns can afford at present.

In presenting this argument to the dealers, I emphasize the fact that the profit motive should be secondary, as the first and greatest stimulant in "Free America" to-day is an ideal, and not material. The difference between the Allies and the Germans is that the former are fighting for an ideal, the latter for something material.

In their great crusade our boys are fighting to-day for Freedom of Democracy. Are we going to help them? Will we assist in manning those 4600 driverless trucks in order that their supplies can be kept in pace with their offensive? It is the "Call of the Front!" The call of your country to help win this war by showing your willingness to release man power for the Government who protects you, and for our boys who are fighting for you. This is the great ideal to which we expect every automobile dealer in America to respond.

I am on my way East from Billings, and when I strike the North Dakota bor-

der Montana will be a completely organized state in the automobile selling industry, with the majority of the dealers members of the N. A. D. A., and all working heart and soul for the carrying out of the war conservation program as outlined by the N. A. D. A.

There is a great future for the N. A. D. A. The aid which it will render its members will be far reaching. It is going to throw a protection around its members and the selling industry generally which has long been needed. It is going to place the automobile business on a high level, dignified and respected by all, and the proprietors are going to realize that they are at last able to enjoy a white man's business.

## Vesper Encouraged

ST. LOUIS, Sept. 16.—President F. W. A. Vesper of the N. A. D. A. was in high spirits Friday when he returned from Milwaukee and Chicago, where he had addressed the Wisconsin Automobile Dealers' Association and the Overland Branch Managers. He said that the spirit shown by the dealers under the adverse circumstances confronting them was simply wonderful.

"The Wisconsin meeting in Milwaukee was held under extremely bad circumstances. Three days of cold, wet weather had made the State Fair a most discouraging proposition. No one could feed the party at noon, so we met in Assembly Hall and held the session until 2.30 before we went to dinner.

"It was the first meeting I had attended since Ford, Hudson and others had announced no more passenger cars. I was a bit fearful. Certainly the gathering did not look cheerful at the beginning. But when we got together, some speeches were made and when the party heard of the troubles other folks are having, it was amazing how they thawed out. By the time the dinner was over those men without a prospect of making their living in the months to come were throwing napkins in the air and cheering. More than 150 membership applications to the N. A. D. A. were signed in the hall. There will be more.

"The spirit was: 'Never mind us. We will lock up our salesrooms if necessary, rent a farm and eke out a living, just so the war is won. Then we'll come back stronger than ever.'

"The Overland meeting developed in a good deal the same way."

## W. S. S. Flag for Miller

NEW YORK, Sept. 16.—Charles E. Miller, of the automotive equipment trade, who has taken an active part in the various Liberty Loan campaigns and who is devoting considerable time to the new campaign, has been awarded the blue and yellow flag for going "over the top" in the sale of War Savings Stamps.

## Chicago Pier Show Opens; 106 Exhibits

**Seventy-eight Show Parts and Accessories—Many Jobbers Have Indicated Intention of Attending**

CHICAGO, Sept. 16—The Automotive and Accessories Exposition opened on the Municipal Pier Saturday. A big floor space is used on one-half of the big pier building and the management expresses the belief that the week will disclose a successful exposition.

There is a total of 106 exhibitors, 78 of whom show parts and accessories. There are six complete trucks shown, two truck formers, four farm tractors and four tractor parts, one industrial tractor, one road tractor, one house lighting system and ten miscellaneous displays, including the Red Cross, State of Wisconsin agricultural exhibit, Cook County School, and some farm papers.

Of this 106 there are 21 who did not have their displays on hand Saturday evening. Probably the total number of displays has been increased by a few since the opening day, because there were a number of blank spaces which did not even have their signs up until this morning and could not be included in the census.

A discrepancy between the actual count of exhibitors and the upward of 200 which preliminary announcements of the show management stated would be on hand comes in part through the fact that, in this list of exhibitors, the show management in many instances listed the jobber and manufacturer of the products he was exhibiting as two separate exhibitors. Some of the jobbers showed the products of a number of manufacturers. The Gray-Heath Co. is the best example of this, carrying the signs of a dozen different manufacturers and with the products of perhaps twice as many manufacturers on view.

The Gray-Heath exhibit was the largest and most complete line of accessories at the pier. There are some particularly pleasing arrangements of booths, the Rayfield carburetor exhibit being probably the most attractive.

The exhibit of agricultural implements was limited to two disks and a plow attached to the three Fordson tractors, shown by the Rue Motor Co. The other tractor displays included the New Craig tractor with its P-T wheel, which makes its first appearance at this show, the Inter-State tractor and the Happy Farmer.

The chief tractor part exhibit is that of the Foote Bros. Gear & Machine Co. with its planetary tractor gearset. The Mercury Mfg. Co. had one of its industrial tractors on display, and the One-Wheel Truck Co. had a road tractor.

Motor trucks shown are the Winter, Muskegon, Traffic, Forschler and Tower.

According to reports received by B. L. Gray, treasurer of the Automotive and Accessories Exposition, Inc., which is

putting on the show, 407 jobbers and dealers had signified their intention of visiting the exposition. The show was staged at the proper time for an exhibition which appealed to jobbers and dealers because it comes at just the time when the jobbers are getting ready to make up their catalogs for the new season.

### Chicago Truck Show Off

CHICAGO, Sept. 15—The truck show which the Chicago Automobile Trade Association had under contemplation, for the Coliseum this winter has been abandoned. A canvass among the truck, road tractor and truck unit manufacturers indicates that 75 per cent are opposed to a truck show. The opinion prevailed that with the unusual conditions confronting the industry a truck exhibition would be inconsistent, highly impractical and not in keeping with the spirit of the times.

### Motor Parts Adds Crew-Levick

PHILADELPHIA, Sept. 16—The Motor Parts Co., distributor of automotive products, has added the eastern distribution of Crew-Levick automotive accessories. The territory embraces the entire Atlantic coast east of Ohio.

### Truck Sales Managers to Organize

MILWAUKEE, Sept. 16—A national association of sales directors of American motor truck manufacturers probably will be permanently founded this week at a meeting to be held in Detroit, as the result of a conference attended by representatives of ten of the largest commercial vehicle factories of the country, which was held in Milwaukee during the past week.

The Milwaukee conference was called upon the initiative of William H. Reese, advertising and sales manager of the Sterling Motor Truck Co., which entertained the representatives for two days. A temporary organization was formed and each delegate was appointed a committee of one to solicit the attendance of one other sales manager for the Detroit meeting this week. The purpose of the organization is to plan ahead for the time when not so much of the capacity of truck factories is required for Government work and the industry is better able to produce vehicles for ordinary commercial channels in sufficient quantities to meet the demand.

Another aim is to insure a proper distribution of the trucks now available for commercial purposes to the end that each truck sold may be placed where it will do the most good in helping to win the war in the shortest possible time.

### Poertner Takes on Wasco

NEW YORK, Sept. 16—The W. C. Poertner Motor Car Co., National distributor, has taken over the distribution of Wasco garage heating systems for this territory.

## Tire Filler People Organize Trade Body

**Plan to Standardize the Business and Push Merits of Goods—Will Try to Sell Idea to Government**

CHICAGO, Sept. 16—With the object of standardizing the filled tire industry and to protect it against irresponsible factors and non-dependable products and to form a national association which shall have for its principal object the presentation to the government of a comprehensive plan for tire conservation, the Automobile Tire Economy Conference is now in session at the Congress Hotel.

Representatives of the following concerns are in attendance: Essenkay Products Co., Chicago; Peerless Tire Filler Co., Chicago; Dahl Punctureless Tire Co., Minneapolis; Pan American Rubber Co., Milwaukee; National Rubber Filler Co., Midlothian, Tex.; Panama Rubber & Equipment Co., St. Louis; Wolverine Tire Cushion & Accessory Co., Detroit; Rubber Air, Inc., New York; Bettern Air Co., Philadelphia; National Synthetic Tire & Rubber Co., New York; Universal Tire Filler Co., Portland, Ore.; National Tire Cushion Co., Kansas City.

Yesterday the representatives got together and formed a national association known as the American Tire Filler Industry, Inc. The following officers were elected: President, Franc D. Mayer, Essenkay Products Co., Chicago; first vice-president, Frank Hager, Universal Tire Filler Co., Portland, Ore.; second vice-president, Lee Lockwood, Dahl Punctureless Tire Co., Minneapolis; third vice-president, W. W. Major, National Tire Cushion Co., Kansas City; secretary, C. P. Umstat, Peerless Tire Filler Co., Chicago.

The association will be incorporated without profit and will present to the government a plan whereby there shall be through the utilization of filled tires a saving of life and time by the use of filled tires in ambulance and transport service behind the fighting lines abroad.

The conference will be in session until Wednesday, during which time several men of national importance will address the meetings as will also several men connected with the government service. At the conclusion of the conference Wednesday a special meeting will be held to consider methods and ways of publicity which will bring the filled tire industry prominently before the public from the conservation point of view. Some sort of national campaign of advertising is contemplated.

### Disco Markets Detroit Batteries

DETROIT, Sept. 14.—From now on Detroit batteries will be sold by the Disco Electric Mfg. Co. as one of the line of Disco products. It is the plan of the company to add a number of different products to the line, allowing dealers and distributors to take on the complete line or such parts of it as they may desire.



# Parade Helped Put Over Tractor Exhibit in Wisconsin Fall Fair

*Fifty-four of Them Chugged Through Milwaukee and Drew a Crowd—Arrangements Not All That Might Be Desired*

MILWAUKEE, WIS., Sept. 13—It is probable that many of the people who came to the Wisconsin State Fair here this week would have gone away with a very inadequate conception of the size and importance of the tractor exhibit had it not been for the tractor parade which was a feature of the program this afternoon.

This really was the big feature of the week, as far as the tractor men are concerned. Fifty-four tractors, most of them pulling equipment of some kind, were in line, and the mile long procession passed through the fair grounds and along the speedway in front of a crowded grandstand. Participants in the parade were:

## The Paraders

Dauch Mfg. Co., Sandusky, Ohio, one machine; Trenam Tractor Co., Stevens Point, Wis., one machine; J. I. Case Threshing Machine Co., Racine, Wis., four machines; Turner Mfg. Co., Port Washington, Wis., Turner Simplicity, two machines; Rock Island Plow Co., Rock Island, Ill., Heider, three machines.

Moline Plow Co., Moline, Ill., Moline-Universal, nine machines; Avery Co., Peoria, Ill., six machines and one motor cultivator; Beeman Garden Tractor Co., Minneapolis, Minn., one machine; Eagle Mfg. Co., Appleton, Wis., one machine; La Crosse Tractor Co., La Crosse, Wis., Happy Farmer, two machines.

Lauson Mfg. Co., New Holstein, Wis., two machines; Allis-Chalmers Mfg. Co., Milwaukee, Wis., four machines; International Harvester Co., Chicago, six machines and one motor cultivator; Townsend Tractor Co., Janesville, Wis., one machine; U. S. Tractor & Machinery Co., Chicago, one machine.

Emerson-Brantingham Co., Rockford, Ill., two machines and one motor cultivator; National Tractor Co., Cedar Rapids, Iowa, one machine; Monarch Tractor Co., Watertown, Wis., two machines; Cleveland Tractor Co., Cleveland, Ohio, four machines; T. J. Micklejohn, Fond du Lac, Wis., Fordson, one machine.

The Columbus Tractor Co., Columbus, Ohio, Farmer Boy, with one machine on exhibition, did not take part in the parade.

Through lack of appreciation of the importance of the tractor industry and its attractiveness to the crowd upon the part of the fair management, and because the tractor men themselves did not take the matter up soon enough, the tractor display was poorly located and miserably arranged. Some of the exhibits were in obscure places and the space provided for demonstrations inside the fair grounds recently had been filled and graded and was in no fit condition upon

which to show tractors. The location of the display as a whole was such that many visitors did not see it all and some saw very little of it. The exhibitors express dissatisfaction and indignation at their treatment this year, but intend to take steps immediately to insure better conditions next year.

Plowing demonstrations were given outside the fair grounds during the week, but bad weather conditions interfered with this feature materially.

Exhibitors report that the attendance of dealers was very satisfactory, especially of motor car men who are looking for tractor connections for the coming year. It was impossible to secure any reliable estimate upon the amount of business done, but that there was considerable admits of no doubt.

Several of the machines were new or practically so. Among the new machines exhibited for the first time at Milwaukee were the Trenam, two models of the Allis-Chalmers, the Uncle Sam and the Plow Boy. Almost as unfamiliar were the Eagle, the Townsend and the Monarch.

Probably the most important of the new models on display was the new general purpose tractor of the Allis-Chalmers Mfg. Co. Again there is a suggestion of the Moline-Universal, as the general purpose machine is of the same type and designed for the same purposes. It is, however, small, being but a one-bottom machine, weighing but 1750 lb. and selling for \$750. The model displayed at Milwaukee is fitted with a  $3\frac{1}{2} \times 4\frac{1}{4}$  4-cylinder vertical Leroi engine, but future machines will not have this engine. The tractor is rated as a 6 hp., without pulley, and has a speed of  $2\frac{1}{2}$  m.p.h. forward and reverse. The steering wheel and extension are supported by a pipe which extends back from the tractor, inside of which are carried the controls and which also supports the hitch. This last named will be remodeled somewhat on future machines.

## Power Farmers Meet

On Friday evening the Wisconsin Power Farming Association held a meeting at the Republican House. Owing to a misunderstanding with the management of the hotel about the time and place of meeting many new members who had agreed to be present were turned away and failed to connect. However, those present discussed in a more or less informal way the conditions in the tractor trade and considered how the association might be of benefit.

It was evidently the opinion of the tractor men present that the future of the tractor trade will depend primarily upon the kind and quality of dealers who are induced to go into the tractor busi-

ness, upon the degree of education in tractor merchandising and operation which can be imparted to them and upon the quality of service they will render. Several of the members spoke of the problems presented at the present time and suggested remedies to meet the immediate needs of the trade.

Renewed efforts will be made to interest the tractor manufacturers and distributors of the state in order that the association may be so representative of the whole trade that its influence will be increased.

## Tractors in Fall Show

MILWAUKEE, Sept. 14—A distinct impression left by the annual fall show of the Milwaukee Automobile Dealers' Association, conducted in conjunction with the Wisconsin State Fair, Sept. 9 to 14, is that the distributors and dealers of Milwaukee and the state have been quick to adapt themselves to the newer conditions brought about by the curtailment of passenger car production and are going at the merchandising of motor trucks and farm tractors with characteristic vigor and energy. The readjustment is being effected without the least external sign of difficulty, although the process unquestionably presents problems of no mean size and importance.

The fall show was a good one, viewed from any angle. Motor Hall, given over exclusively to the use of the M. A. D. A., was filled with fine displays. There were passenger car exhibits a-plenty, although, save in a few instances, the offerings were not distinctly new products such as the factories have been accustomed to bringing forth at this period of the year.

The notable feature was the appearance of the farm tractor alongside the passenger car, and the much larger presentation of commercial cars, compared with previous fair shows. Within the last 30 or 60 days a large number of Milwaukee dealers who for the most part have been distributing passenger cars exclusively have entered the ranks of truck and tractor merchants and more are being made every day. Then there were farm lighting plants, which some distributors have adopted already and others doubtless will adopt as a profitable line to go with trucks and tractors.

On the whole, the 1918 fall show can be said to have interested more people in more ways than any previous effort made by the M. A. D. A. The fair visitor, whether city man or rural resident, was able to find at least one thing in which he is vitally interested—be it passenger car, truck, trailer, tractor, convertible truck chassis or farm lighting plant.

The fair was unfortunate to some extent in striking a week of rather bad weather. The fact that 18-45 registration day broke into the schedule on Sept. 12 was something of a factor in limiting attendance. However, the exhibitors are as a unit in saying that it was the most profitable fair at which they have ever shown, considering the much more varied offerings they were able to present.

## Motor Truck Makers to Maintain Output

**Will Receive Priority for Materials  
Practically to Continue Present  
Production**

NEW YORK, Sept. 14—Manufacturers of motor trucks are to be permitted to maintain production during the last half of 1918 at the average reached during the past 18 months. They are to receive priority ratings in class B4 for such materials as may be necessary to produce during the period July 31 to Jan. 1 one-third of the number of vehicles produced for civilian use during the whole of 1917 and the first half of 1918.

The certification of Priorities Certificates which will enable manufacturers to obtain raw materials and parts already has been commenced by the Automotive Products Section of the War Industries Board, and these are now being cleared by the Priorities Division. Such certificates, it is pointed out by the National Motor Truck Committee of the N. A. C. C., cover only vehicles intended for civilian uses, which take a B4 rating under the ruling of the War Industries Board, and not trucks built for war purposes, which may take a higher rating.

It is believed that manufacturers of road tractors, trailers, truck attachment units of the truck-former type and body builders who build for the trade and do not dispose of their entire outputs to manufacturers will come within the same classification as the truck manufacturer. Where they have not already done so, they will be required to supply the Automotive Products Section with sworn statements of their production during 1916, 1917 and the first half of 1918.

In its statement the National Motor Truck Committee says: "It is felt that the board will not look with favor on any increased production beyond the average of the last 18 months. Indeed it will be disappointed if sales are not reduced. In view of trucks being sold only to essential industries, it is expected that substantial savings will be made from past production. So you should constantly bear in mind that the number you may be permitted to make by the terms of the Industry Certificate issued you does not justify you in making such number unless such number is necessary to supply your demand from essential industries."

In those cases where production of individual companies shows a reduction during the first half of 1918 as compared with the previous year, due to heavy production of military vehicles, the allotment has been reduced to a basis of the production for the first six months of 1918, on the expectation that continuing or expected additional war orders will counterbalance the reduction; and in cases where companies were not in real production during the last of 1917 the allotment has been based on the average of production during the time they were in production.

When approved by the Priorities Division, certificates will be mailed or delivered to the manufacturer. These will authorize him to purchase the necessary materials to complete the specified number of trucks and will contain a form of affidavit which must be attached to each order for material.

The new arrangement supersedes the older ones requiring individual priority certificates for each order. Priority certificates that have already been filed with the board will not, therefore, be acted upon.

## Packard on War Work One Hundred Per Cent

**Company's 110 Dealers to Be Permitted to Sell Trucks If Buyers  
Are in Essential Class**

DETROIT, Sept. 14—The Packard Motor Car Co. started last Thursday 100 per cent on war work and will confine its efforts to the production of Liberty engines, of which it is now making about 35 daily, airplane bodies, war tractors and trucks. The production of trucks includes all war models and those for commercial use which are intended for essential industries. The truck production schedule provides for 8000 to 10,000 vehicles for the fiscal year ending September, 1919. Fully one hundred million dollars' worth of war work will have been completed during the coming year.

During the suspension of car manufacture the company will endeavor to maintain service on all trucks and the forty-five thousand passenger cars that are now running.

The company has affiliated with it 110 dealers who will be affected by the new arrangement; many of these have increased their stocks of accessories. Those who are handling trucks will be permitted to continue, provided they sell the vehicles to essential industries.

### Abandon Importers' Salon

NEW YORK, Sept. 16—The Annual Importers' Automobile Salon which is held at the Hotel Astor in New York and at the Congress in Chicago has been abandoned. Members of the Board of Directors voted unanimously not to hold the event.



*The Columbus dealers, in order to come up for a breath of air in these strenuous times, took a day off last week and held an outing at Columbia Park. They mixed around all day, played games, forgot business for a few hours and then went back to work again.*

## Prominent Tradesmen Assume New Duties

### Resignations and Promotions Place Workers in New Places

**Frank D'Arcy**, formerly manager of the Standard Oil Garage, Quincy, Ill., is mechanical manager with the Quincy branch of the Overland Automobile Co.

**A. C. Dallach**, formerly proprietor of the Machinery & Motor Co., Quincy, Ill., has sold out his interests to the E. C. Long Co. and Dallach is now operating a large manufacturing plant at LaGrange, Ill.

**B. F. Baldon**, formerly manager of the Baldon Motor Service and Repair Co., Quincy, Ill., is now service manager with the Beatty Electric garage.

**Glen Cutforth**, formerly service manager with the Cutforth Bros. garage, Quincy, Ill., is now service manager with the Topeka Auto Co.

**Charles McNeill**, formerly shop foreman with the Nichols Co., Quincy, Ill., is now with the W. T. Duker Co.

**O. H. Kathman**, proprietor of the O. H. Kathman Co., Quincy, Ill., is now in the service and is stationed at Augusta, Ga.

**Stewart W. Munroe** has been appointed manager of the Detroit branch of the Harroun Motors Corp., succeeding R. H. Schmitt-diel. Schmitt-diel has rejoined the forces of the Paige company, having been appointed retail sales manager of the Detroit branch of Jefferson Avenue.

**A. B. Jones**, second vice-president of the B. F. Goodrich Co., Akron, has been appointed by the American Red Cross to the post of director of transportation and distribution of Red Cross supplies in France.

**Frank M. Eldredge**, Detroit, has assumed entire charge of the sales and advertising departments for L. V. Flechter & Co., New York. He will still continue his publicity and sales promotion bureau.

**C. W. Whitson**, formerly with the Fulton Motor Truck, Farmington, Long Island, and who recently resigned from that organization, has been appointed general sales manager of the Panhard Motors Corp., Grand Haven, Mich.

**Dan Cohen** has been elected president and treasurer of the Fulton Truck Co. of New Jersey, Newark. The company will distribute Fulton trucks in New Jersey.

**Curtis B. Lyon** has been placed in charge of a new Brooklyn (N. Y.) branch, which has been opened by the Wm. Parkinson Motor Sales Co., Stutz distributor.

**J. P. Guyer** has been made manager of the Bethlehem, Pa., branch of the Packard Motor Car Co. of Philadelphia. He succeeds J. E. Huggins, resigned.

**Fred H. Miller**, for the last 6 years manager of the Brooklyn, N. Y., branch of the Packard Motor Car Co. of New York, has been appointed manager of the Manhattan branch. **Charles G. Embleton** becomes Brooklyn manager.

**Samuel W. Prussian**, president and owner of the Guaranty Truck Co., Cambridge, Mass., has accepted a position in the quartermaster's department for the duration of the war, although he is exempt from the draft because of his age.

**Frank W. Hodgedon**, manager of the C. S.

Henshaw Co., Dodge Brothers' dealer, Boston, is now connected with the Food Administration Bureau at Washington.

**Norval A. Hawkins**, sales manager for the Ford Motor Co., has entered the United States Army Ordnance Department as an assistant to Major George D. Wilcox, who is in charge of the Motor Transport Service for the Detroit district. Hawkins has been granted leave of absence by the directors of the Ford company to permit him to devote all his time to government work. He will resume his duties with the company when his services are no longer required by the government.

**Charles H. Gresslee** has been appointed district sales manager for the Middle Western section for the All-American Truck Co., Chicago.

**Leon Percy** has been appointed production manager of the Detroit Battery Co., Detroit.

**Neal J. Downey**, for eight years manager of the used-car department of the KisselKar Co. and the Edwards Motor Car Co., 178-180 Seventh Street, Milwaukee, has been appointed sales manager of all departments in the passenger-car division of the two companies, which distribute the Kissel and Dodge respectively.

**R. L. Johnson**, manager of the parts department of the Hudson-Phillips Motor Car Co., St. Louis, has been called to Camp Pike to begin training for a commission in the army. **Edward Kohlman** succeeds him.

**Auguste Chouteau**, former vice-president of the Bittel-Leftwich Tire Co., St. Louis, and financial adviser of five other accessory companies in that city, has been commissioned second lieutenant in France.

**Earl Moore** of the Moon Motor Car Co. staff in St. Louis, has been made local sales manager for the company.

**Harley A. Reid** has been appointed Exide service manager in St. Louis.

### Boosters on Their Outing

**NEW YORK**, Sept. 17—New York dealers dropped their business cares today and played at Fred Wagner's Smith-town, L. I., Farm. The occasion was the annual frolic of the Big Village Motor Boosters. More than 100 attended.

## 3 Car Manufacturers Raise Their Prices

### Hupp, Packard and Hudson Make Increases—Packard's Highest Now \$6700—Hudson's \$3650

**DETROIT**, Sept. 14—The new price of both the Hupmobile touring car and roadster is \$1,500 instead of \$1,350. This advance was effective Sept. 1.

#### Packard Prices Increase \$500

**DETROIT**, Sept. 14—The Packard Motor Car Co. has advanced its prices, effective Aug. 26, as follows:

Model	New Price	Old Price
3-25 Touring .....	\$4,800	\$4,300
3-25 Limousine.....	6,350	5,850
3-25 Broughtam .....	6,500	6,000
3-25 Coupe .....	6,150	5,650
3-35 Touring .....	5,150	4,650
3-35 Limousine .....	6,700	6,200

#### Hudson Super-Six's Advance \$250

**DETROIT**, Sept. 14—The Hudson Motor Car Co. has advanced the prices of the Super-Six model \$250, effective Sept. 1, as follows:

Model	New Price	Old Price
Seven-pass. Phaeton....	\$2,200	\$1,950
Four-pass. Phaeton ....	2,300	2,050
Sedan .....	3,000	2,750
Runabout Landau .....	2,690	2,440
Limousine .....	3,650	3,400
Town Car .....	3,650	3,400
Coupe .....	3,100	2,850
Town Limousine .....	3,400	3,150

### To Train Women Drivers

**PHILADELPHIA**, Sept. 14—To meet a scarcity of motor truck drivers which will be increased by the new draft, several automobile agencies are offering to co-operate with the National League for Women's Service in Philadelphia in training young women to drive. No charge will be made for this instruction. The classes will open October 1 and only eight will constitute a class, though there will be many classes. Repairing, as well as driving, will be included in the course and the graduates are assured of positions.

### Automotive Securities Quotations

	Bid	Asked		Bid	Asked
Ajax Rubber Co.....	60½	62½	Maxwell Motor Co., Inc., com....	25½	26
J. I. Case T. M. Co., pfd.....	81	83½	Maxwell Motor Co., Inc., 1st pfd. 56½	57½	57½
Chalmers Motor Co., com.....	4	6	Maxwell Motor Co., Inc., 2d pfd.. 20	20½	20½
Chalmers Motor Co., pfd.....	20	30	Miller Rubber Co., com.....	106	108
Chandler Motor Car Co.....	86½	88½	Miller Rubber Co., pfd.....	95	96
Chevrolet Motor Co.....	115	122	Packard Motor Car Co., com.....	120	126
Fisher Body Corp., com.....	36	37	Packard Motor Car Co., pfd.....	90	93
Fisher Body Corp., pfd.....	84	85	Paige-Detroit Motor Car Co.....	15½	16½
Fisk Rubber Co., com.....	60	62	Peerless Truck & Motor Corp....	14	16
Fisk Rubber Co., 1st pfd.....	97	103	Portage Rubber Co.....	105	109
Fisk Rubber Co., 2d pfd.....	79	83	†Reo Motor Car Co.....	14½	15½
Firestone Tire & Rub. Co., com.105	107	107	*Saxon Motor Car Corp.....	5	7
Firestone Tire & Rub. Co., pfd.. 94	96	96	Springfield Body Corp., com....	..	..
General Motors Co., com.....	114½	116	Springfield Body Corp., pfd....	..	..
General Motors Co., pfd.....	78	78½	Standard Motor Construction Co. 12½	13½	13½
B. F. Goodrich Co., com.....	46½	47½	*Stewart-Warner Speed. Co.....	56½	57½
B. F. Goodrich Co., pfd.....	99½	101	*Studebaker Corp., com.....	45½	46½
Goodyear Tire & Rub. Co., com.152	155	155	*Studebaker Corp., pfd.....	85	90
Goodyear Tire & Rub. Co., 1st pfd. 99½	100½	100½	Swinehart Tire & Rubber Co.....	50	60
Grant Motor Car Corp.....	1½	2½	United Motors Corp.....	27½	27½
Hupp Motor Car Corp., com.....	3	3½	*U. S. Rubber Co., com.....	60	61
Hupp Motor Car Corp., pfd.....	78	82	*U. S. Rubber Co., pfd.....	103½	105
International Motor Co., com.....	32	39	*White Motor Co.....	45½	46½
International Motor Co., 1st pfd. 62	66	66	*Willys-Overland Co., com.....	19½	20½
International Motor Co., 2d pfd. 36	41	41	*Willys-Overland Co., pfd.....	81	83
Kelly-Springfield Tire Co., com.. 47½	49	49	Standard Parts Company.....	60	65
Kelly-Springf'd Tire Co., 1st pfd. 79	87	87			
Lee Rubber & Tire Corp.....	20	21½			

\*At close Sept. 14. Listed N. Y. Stock Exchange. †Par value \$10.

## New York Approves 45 Non-Glare Devices

### Secretary of State Makes Public List with Candlepowers That Must Be Used

ALBANY, N. Y., Sept. 16—Secretary of State Francis M. Hugo has made public the names of 45 anti-glare devices which have been tested according to the provisions of the New York headlamp law and which are approved for use in New York State.

However, it is essential, in order to comply with the requirements of the law, that they be used with headlamp bulbs of prescribed candlepower, and, in some cases, that headlamps be properly tilted. In the case of 20 devices lamps need not be tilted.

The law under which these tests were made undoubtedly represents the first attempt of any state legislature to attack the headlamp glare problem in a scientific manner. Prior to the drawing up of the law, the Secretary of State's office consulted with representatives of the Society of Automotive Engineers and the Society of Illuminating Engineers in an effort to obtain some basis upon which to determine the nature of glare and the best remedial measures. In consequence, a measure was drawn which prescribed that:

1—The candlepower of headlamps must be at least 1200 at a distance of 200 ft. in front of the car and at a point between the roadway and 42 in. above it.

2—The candlepower must not exceed 2400 at a distance of 100 ft. in front of the car and at a point 60 in. (or any higher) above the road.

3—The candlepower must not exceed 800 at a distance of 100 ft. in front of and 7 ft. to the center of the car at a point 60 in. above the road.

The devices which have been approved have been determined by tests to come within the requirements of the law when used with bulbs of a prescribed candlepower. In using these devices, Secretary Hugo suggests that dealers and owners:

Devices	Beam Horizontal		Beam Tilted		Tilt, Ft. per 100 Feet.
	B Lamp.	C Lamp.	B Lamp.	C Lamp.	
Bausch & Lomb.....	..	..	17	15	3
Conaphorse, clear.....	17	13	24	20	1
Conaphore, noviol.....	17	13	24	20	1
Controllite.....	18	20	..	..	..
Clamert.....	18	15	..	..	..
Culver, radio.....	17	17	20	20	1
Coreylite.....	24	24	..	..	..
Crew-Levick, Fractor.....	20	11	24	20	1
Dillon.....	10	..	..	..	..
Dwellelight.....	10	..	..	..	..
Enlow, prism dimmer.....	16	14	22	20	3
Hein, dimmer.....	24	24	..	..	..
Holophane.....	18	16	22	20	1
Legal level light.....	..	..	17	20	2
Lee Knight lens.....	11	13	18	24	1½-3°
Lenslite.....	18	16	22	20	1
Liberty.....	17	21	..	..	..
Letts.....	..	..	24	24	2¾
Legalite.....	..	..	17	20	3
Mac-Kno-Glare, bulbs.....	20	..	..	..	1
Mac-Kno-Glare, caps.....	..	..	20	21	1¾
McKee.....	11	15	17	21	1
More-Lite, clear.....	10	..	..	..	..
Macbeth.....	21	24	..	..	..
Nu-Ray.....	11	10	17	15	1
No-Glare-On, bulb.....	10	..	17	20	4
Non-Glare, lens.....	..	..	..	..	..
Non-Glare, shade.....	24	24	..	..	..
Osgood.....	15	15	20	20	1
Ormiston.....	24	24	..	..	..
Prismolite.....	13	12	20	20	2
Primolite.....	19	23	..	..	..
Raydex.....	..	..	22	20	1½
Right.....	11	13	19	21	3
Sun-Ray.....	10	14	17	20	1
Saferlite, diffusing.....	10	..	..	..	..
Saferlite, deflector.....	..	..	17	20	3
Stryker, deflector.....	17	..	24	..	¾
Shaler, roadlighter.....	21	24	..	..	..
Stop-Glare lens.....	10	..	..	..	..
Stewart.....	12	..	..	..	..
Suess rib lens.....	..	..	17	14	3
Victoria, non-glare bulb.....	18	10	..	..	..
Warner.....	10	..	..	..	..
Webb Multifrax.....	..	..	17	17	3

\*Manufacturer's adjustment.

1—See that the right candlepower bulb is used.

2—See that lenses are properly placed and not twisted; that the top side is at the top and that the front is outward.

3—See that the tilt is correct. To do this have the car on a level surface in front of a wall or some suitable vertical surface, 30 ft. or more distant. Remove the front glasses or devices and by means of focusing adjustments move the bulb back and forward until the beam of the smallest diameter is obtained on the wall. By measuring the height of the center of the beam from the ground and

comparing that with the height of the center of the headlamps from the ground, the tilt can be ascertained and adjusted as required.

4—See that the bulb is properly adjusted with respect to the focus of the reflector with the controlling device in place. Do this by observing the beam pattern on the wall.

The table on this page gives the approved devices:

The term "B Lamp" in the accompanying table refers to the usual tungsten headlamp bulb. The term "C Lamp" refers to the gas-filled headlamp bulb.

## WHAT DRIVE-AWAYS HAVE MEANT TO RAILROADS

Manufacturers were asked what part of their production since Jan. 1 had been sent overland and what part by freight; also what the saving in freight cars had been by driving away cars. The replies, while incomplete, yield certain interesting figures shown in the table. These show that five makers saved the railroads 2773 cars.

Company	Period	Driven		Where	Shipped		Where	No. of Freight Cars Saved
		No.	Per Cent		No.	Per Cent		
Dixie Motor Car Co.....	Jan. 1-Aug. 1	....	33¾	East & South	....	66¾	West & South	....
Empire.....	Jan. 1-Aug. 1	....	10	.....	50-75	90	New England	....
Franklin Automobile Co. Jan.	1-Aug. 1	3,492	40	.....	5,238	60	South & West	1,164
Haynes Automobile Co. Jan.	1-Aug. 1	....	75	.....	....	25	.....	....
Hupmobile.....	Jan. 1-Aug. 1	....	29	.....	....	75	Empties were moving	478
Lexington Motor Co.....	Jan. 1-Aug. 1	483	25	.....	1,441	75	.....	161
Moon.....	.....	150	..	Illinois & Mo.	1,000	..	Jersey	....
Nash.....	Jan. 1-Aug. 1	....	21.79	.....	....	..	.....	700
Paige-Detroit.....	Jan. -July	860	..	.....	4,901	..	West	270
Totals.....	.....	4,985	169.12	.....	672,874	231.66	.....	2,773



## Big Gain in Trucks Sold in Massachusetts

**For Every Car Sold Dealers Sell  
1 3/5 Trucks—Fees Take  
Big Jump, Too**

BOSTON, Sept. 14—That the passenger car dealers who got on the truck band wagon in Massachusetts some time ago saw the handwriting on the wall and knew where their best interests lie is shown by the registration figures just given out by the Massachusetts Highway Commission for the first 8 months of this year, and comparisons are made with vehicles listed in 1917.

Taking the registrations for Jan. 1 to Sept. 1 this year and comparing them with the figures for the total of 1917, it shows that of the increased registrations over last year, for every passenger car listed there was registered 1 3/5 trucks, or 16 trucks for every 10 cars.

Last year there were registered in Massachusetts 148,266 cars. Up to Sept. 1 this year there were 151,818 cars listed, or 3552 more than the entire 1917 figures. For the 12 months of 1917 there were 26,008 commercial vehicles listed, and for the first eight months of this year there were 31,649 registered, or a gain of 5641. That is 2089 more commercial vehicles than passenger cars.

If a comparison is made between the first 8 months of 1917 and the same period of this year the figures are 136,417 and 151,818 cars respectively and 24,025 and 31,649 trucks. That was 15,401 cars gained and 7624 trucks. However, if it were not for the big truck gain this year, representing some 32 per cent to 11 per cent for cars, the total registration for 1918 up to date would have fallen below the figures for the entire year of 1917.

For the first time, too, since motor cars have been registered the receipts have jumped above the \$2,000,000 mark. The fees for the first 8 months of this year totaled \$2,065,405.60. The receipts for the same period of 1917 were \$1,829,852.36, which was \$235,553.24 less than this year's sum. In fact, the receipts for 8 months of this year are \$95,592.60 more than the state received from motorists for the entire 12 months of 1917.

As there are 4 months left in this year the fees will easily run to \$2,250,000 for 1918. And the fines will add at least \$50,000 more, making a very handsome sum available for the highways. As the Federal Government has taken over the direction of all road construction now this means that Massachusetts will pile up a big reserve for highway maintenance, for nothing will be done to a lot

of the smaller roads that are given consideration each year, the entire energies of the commission being centered on the through routes. And Uncle Sam will help pay for the through arteries. Below are given the comparative figures.

### Dauch Changes Personnel

SANDUSKY, Sept. 14—The Dauch Mfg. Co., which produces Sandusky tractors, has made two changes in its personnel: L. E. Willson has been appointed general sales manager, and J. W. Wellington general manager. Willson was formerly vice-president in charge of sales of the Briscoe Motor Corp., Jackson, Mich., and Wellington was formerly production manager of the New Castle (Ind.) plant of the Maxwell Motor Co.

### New York Routes Cars and Trucks

NEW YORK, Sept. 16—The New York Police Department has adopted a new system of routing passenger cars and commercial vehicles through the principal streets of the city. The plan has been adopted to eliminate confusion and reduce congestion. The order restricts 22 thoroughfares, chiefly the main north and south avenues, to passenger or commercial traffic, 10 being exclusively for passenger cars and 12 for motor trucks. Motor trucks will be prevented from using the streets designated for the use of passenger cars, though their drivers may make deliveries or collections of merchandise on those streets by entering them at the nearest intersecting street.

### B-E Moves Uptown

NEW YORK, Sept. 14—The B-E Motor Engineering Co. has moved from 149 Church Street to 50 East Forty-second Street. The company, now about a year old, acts as a sales engineer and handles the products of the K D Lamp Co., Cincinnati; Apco Mfg. Co., Providence, maker of parts for Fords, and Standard Metal Mfg. Co., Newark, N. J., making mufflers for Fords. Horace H. Eckhouse the "E" of the company, states that the demand for goods is strong but that a shortage of materials is felt in the jobbing trade.

### Canada Conserves Gasoline

OTTAWA, CAN., Sept. 14—Canada has fallen in line with the policy which went into effect across the line a few days ago of conserving the gasoline supply by refusing to sell to owners on Sundays. The Imperial Oil Co. has led the move, and all Imperial service stations in Canada will be closed on Sunday, this ruling to be effective for the duration of the war.

## Massachusetts Pumps Are Found 100% O. K.

**State Department of Standards  
Tested Them All and Found Few  
to Be Inaccurate**

BOSTON, Sept. 14—The Massachusetts State Department of Standards has just finished a very thorough investigation of gasoline pumps throughout the state to determine if motorists were receiving full measure these days. This is the second year an investigation was held, last year many pumps being found defective.

By means of cars in which specially constructed glass tanks were placed, with measurements carefully marked, it was possible to drive up to any roadside pump, buy gasoline and in a minute determine whether it was perfect or imperfect. Following the campaign a year ago owners of pumps were notified to have them repaired when they were below standard. The department permits a variation of 6 cu. in., or about five tablespoons, in 5 gal.

This year Thure Hanson, director of standards, has announced that there has been a marked improvement, and that it may be said that the pumps in Massachusetts are practically 100 per cent perfect. In Worcester County, in the heart of the state, every pump tested was found to be 100 per cent efficient. In the western part of the state conditions were equally as good, for while a few were slightly below the requirements there were more than an equal number giving excess fuel. One pump, with a remarkable record, was found at Holden; it had pumped 173,000 gal. of gasoline in 2 years, and was found to vary less than a gill from the amount purchased by the garageman from the supply company.

The only place where short measure was noticed much was in the vicinity of Camp Devens, where nine pumps were a little below the standard. These were ordered rectified.

### Two New Strom Bearing Offices

CHICAGO, Sept. 16—The U. S. Ball Bearing Mfg. Co. has opened two new sales offices. A San Francisco office at 434 Rialto Bldg. is in charge of S. C. Kyle. A Detroit office at 1437 Dime Bank Bldg. is in charge of A. deMaringh.

### Fair Week Was Used-Car Week

MILWAUKEE, Sept. 16—Wisconsin State Fair week, Sept. 9 to 14, was observed as "used-car week" by practically every dealer in Milwaukee. While no attempt was made to centralize the effort, each member of the Milwaukee Automobile Dealers' Association made a special display of used cars in his salesroom, each of which attracted hundreds of people from Milwaukee as well as thousands who came to the city during the week to attend the state fair.

### Registration of Cars and Trucks in Massachusetts

	Jan. 1 to Sep. 1, 1917	Entire 12 Months, 1917	Jan. 1 to Sep. 1, 1918	Gain Jan. 1-Sep. 1, 1918, Over Jan. Sep., 1917, List	Gain Jan.-Sep., 1918 Over Entire 12 Mo., 1917
Cars .....	136,417	148,266	151,818	15,401	3,552
Trucks .....	24,025	26,008	31,649	7,624	5,641
Total.....	160,442	174,274	183,467	23,025	9,193

## Campaign Started for Greater Use of Trucks

### New York State Officials Want Farmers and Merchants to Relieve the Railroads

SYRACUSE, Sept. 14—A campaign has been organized to get every merchant, manufacturer and farmer in the State to use motor trucks for freight shipments. The campaign in this vicinity is under Dr. John A. Matthews, president of the Chamber of Commerce and chairman of the Highway Transport Committee in Central New York. He works through about 75 deputies.

The work of these deputies will be to bring before the residents of their counties, especially the farmers, the necessity of using motor trucks to transport freight and relieve the railroads of as much of their "short haul" traffic as possible.

The use of motor trucks in carrying freight has been more general this summer in Central New York than ever before. Bus lines carrying all sorts of merchandise connect practically every city, village and town in this territory. Most of them work on regular schedules, making one, two and sometimes three trips a day. Connections are made at intermediate points with other lines, and freight is often carried across the State faster than by rail. In addition, merchants and others using the service are not, in most cases, forced to hire truckmen to bring the goods to their stores.

Through the co-operation of the Chambers of Commerce in many of the larger cities, return loads bureaus are maintained, and it is not often that a truck has to make a trip without a full load.

With railroad schedules restricted and many trains eliminated, scores of men in this section have gone into the business of operating truck lines, carrying passengers and freight. The rates are not higher, and in some cases lower, than on the rail lines, and they have enjoyed all the patronage they could accommodate.

Merchants here were instrumental in having one of these lines established between this city and Camillus, when the New York Central eliminated a train that formerly had brought a large number of shoppers to this city. A bus line now carries these people, together with workmen in local shops who live in Camillus and intermediate points.

### Start Merchants' Delivery Route

KANSAS CITY, Sept. 14—A Merchants' Delivery Co., organized by Kansas City merchants, has bought 14 trucks, and established a service for the benefit of its stockholders only. The stockholders are former patrons of the Burgher Package Delivery Co., which went through bankruptcy recently, its trucks and other assets being sold. James Burgher, formerly proprietor of the delivery company, is manager of the co-operative concern.

The Merchants' company will operate

ten Ford trucks, two of these with screened bodies; two Ford ton trucks, and two Dodge trucks. Eight of these went into service Sept. 6. The delivery district is zoned.

Deliveries within the first zone—about four miles from the retail district—are uniformly 12 cents each. Deliveries in the outer zone are 30 cents each, with the exception of Kansas City, Kansas, to which the charge is 15 cents. Deliveries are made about seven miles southward to the city limits, and ten miles eastward, into Independence, Mo.

The institution of the one-delivery-a-day regulation, with which most Kansas City stores—including those not patronizing the new delivery system—are co-operating, has facilitated the organization of the new company. The zones are subdivided for scheduling deliveries. For instance, stores must have packages destined for territory within a mile of the retail district, ready for the trucks in the evening, since these deliveries are made first thing in the morning.

Merchants buy stamps bearing the designations "12 cents," "15 cents" and "30 cents," which they attach to the packages they prepare for the delivery system. The fifteen cent stamps are also used for special deliveries. No large or heavy goods are delivered.

There are now 20 stockholders in the new delivery company; and these only are served. There are several former patrons of the Burgher company, which now are using messenger service and parcel post for deliveries; these it is expected will ultimately take stock in the company, and get the service. The stockholders are millinery, ladies' wear, men's furnishing and clothing, and specialty stores.

### Canadian Fordson Distribution

DETROIT, Sept. 13—Arrangements have been made whereby the Fordson tractor will be handled by the Ford Motor Co. of Canada, Ltd., through its branches and dealer organizations from coast to coast. Shipments have been made to Ford dealers throughout this section. The tractor will sell to the consumer at \$950 f.o.b. Dearborn, Mich., plus the freight to destination. The Canadian government had 1073 tractors delivered to the various provinces in accordance with arrangements made with Henry Ford & Son.

### England Has 3780 Fordsons

LONDON, ENG., Aug. 13—According to a report made in the House of Commons last week there are 3780 Fordson tractors at the disposal of the Food Production Department. There are also 1700 heavier tractors of the following types at the disposal of government departments as follows: Titan, Mogul, Saunderson, Overtime, and Clayton. In all some 3780 Fordson tractors are proposed to be used for the department's own tractor scheme, as a large number, if not the majority of these tractors have been transferred to Henry Ford & Sons for distribution through regular trade channels.

## Boston Worrying Over Service Coupon Books

### Now That Labor Charges Have Gone Up, a Problem of Adjustment Is Apparent

BOSTON, Sept. 14—Some Boston dealers handling passenger cars are confronted by another problem that is giving them worry. When they sold cars some months ago they had the free service book plan in vogue, which entitled owners to so many hours of free overhauling from time to time during a year. At the time some of the books were issued the charge for labor varied from 75 to 90 cents or \$1 per hour. Now the labor price has gone up approximately to about \$1.25 an hour.

The issuing of the books to owners was a contract just as binding as if it were signed by both parties. And there were no qualifying clauses regarding prices contained in them. At the present time when owners come in for free service with their books they have to be recognized. And with the shortage of help, the higher prices and the dropping off in business due to curtailment of cars some of the dealers are wondering just how to handle the situation.

If they should try to tack on the extra price the owner could legally refuse to pay for it. And with factory officials in some instances urging the dropping of all free service the burden of handling the enigma falls upon the shoulders of the dealers.

Whether to grin and bear it or try to get owners to recognize the necessity of paying the extra cost between what was charged when the books were issued and present prices will need some diplomacy. The end of the free service book is in sight anyway, for they are not being issued any more.

### New Jobber in Utah

SALT LAKE CITY, Sept. 14—The Motor Mercantile Co. has entered the automotive equipment jobbing trade at 115-117 South West Temple in a modern three-story building. It is wholesale only. The principals are: President and general manager, A. D. McMullen, formerly of the Strevell-Paterson Co. and Capital Electric Co.; vice-president, E. J. Raddatz; secretary and treasurer, F. A. Pyke; sales manager, V. A. Culver; buyer, George G. Hansen, formerly buyer for the Chanslor & Lyon Co., San Francisco. The directors are McMullen, Pyke, Raddatz, Culver and J. P. Gardner. The active officers are all well known to the inter-mountain trade.

### Emil Grossman in New Business

NEW YORK, Sept. 14—Emil Grossman, former president of the Emil Grossman Mfg. Co., has instituted a new business, styled E. G. Mfg. Co., located at 250 West Fifty-fourth Street. The company's business consists of locating surplus stocks of automotive equipment and supplying jobbers whose stocks are short.

## More Women Workers Invade the Industry

### Take the Place of Men for All Kinds of Work—Customers Pleased with Change

SPOKANE, Sept. 14—Twelve women, several of them married, are performing the labor of men in the Nonolio service station, an establishment for the restoration of automobiles, recently opened at 1829 Sprague Avenue. The women are dependable and perform the work more neatly than men, according to E. M. Santee, manager. The work consists of painting, polishing and refinishing automobiles. It is performed in less time than given ordinarily to a car, but 5 days being consumed.

### Wants Women for Stock Clerks

HARTFORD, Sept. 14—The Elmer Automobile Co., Ford distributor in northern Connecticut, has advertised for women to take the place of men in the stock and parts department. One of the Elmer girls, by the way, is the first in the local automobile industry to adopt a new form of combination working suit. One reason for the proposal to put in all women is the uncertainty of male help at this particular time. The concern has been somewhat hampered by shortage of male employees in the parts department in the last six months.

### Girls in Cadillac Service Department

BOSTON, Sept. 14—Young women have added to the mechanical department of the Cadillac Automobile Co. of Boston by Manager Albion L. Danforth. After giving the matter some thought, having put girls to work in the salesrooms where they proved efficient, he decided to try them in the service department. The first girl was put to work in the stock room supplying parts to customers. She

did the work so well that the vacancy in service sales department caused by the draft was filled with another young woman. She proved very valuable and fitted into the position nicely, where she determines cash and credit transactions from her credit file at the time a job order is written, and keeps a record of all the movements of cars through the various departments of the building as well as answering numerous telephone calls. And the customers seem to like dealing with the young women, who are courteous and intelligent. Others will fill places made vacant from time to time.

### Oregon Needs Tractors

PORTLAND, Sept. 14—Oregon farmers need more tractors. Only about one farmer in 100 has a tractor available, either through ownership or hire, to help him get in his crops. Horses are high priced and scarce and it costs a fortune to feed them. Also, it requires much extra labor to handle them as compared with the labor cost of tractor operation. High prices for farm products are not a solution of the problem, and unless the state or some banking association finds some means to finance the purchase of tractors for farmers the situation will soon be serious as regards the growing and harvesting of crops.

### 246,972 Cars in Canada

MONTREAL, Sept. 14—The Montreal Automobile Association has compiled the following statistics of automobile licenses issued for 1919 to date in the various Provinces: Prince Edward Island, 564; Nova Scotia, 7290; New Brunswick, 1500; Quebec, 23,337; Ontario, 97,500; Manitoba, 22,214; Saskatchewan, 44,267; Alberta, 27,000; British Columbia, 13,500. Ontario also has registered 7000 trucks in addition to passenger cars.

### Electric Steel Absorbs Crucible

CLEVELAND, Sept. 14—The Electric Steel & Forge Co. has absorbed the Crucible Steel Forge Co. of this city and will continue and expand this business.

## Dealer Starts School to Instruct Mechanics

### Boston Cadillac Man Hopes Thus to Fill Gaps in Help Ranks— Learners Are Paid

BOSTON, Sept. 14—Albion L. Danforth, head of the Cadillac forces in eastern New England, put into operation a plan for meeting the shortage of skilled labor that has been a big success. Working in conjunction with A. P. Welburn, manager of his service department, an educational department for training mechanics was opened some weeks ago, with very good success. One corner of the service department was set aside, and out of the mechanical force was chosen a man who could teach as well as work. A list of necessary tools was made up, and cost prices were placed upon them for the students enrolled. The young men are selected carefully so that "rovers" and "lazybones" will not get in and disorganize the department. On entering a student signs the following agreement:

"It is understood that if my service is satisfactory, I am to receive \$14 weekly for the first six months; \$17 weekly for the next three months thereafter; \$18 weekly for the next three months thereafter; \$20 weekly at the end of the first year, and after that period whatever my services are worth to the company. If I am still with the company at the end of the first year, I shall receive a bonus of \$26, and if I am still with the company at the end of the second year I shall receive an additional bonus of \$26. If at any time I leave or am discharged I forfeit the bonus. It is also understood that I shall pay approximately \$5.50 for tools."

Regular stock cars taken in trade for new Cadillacs are used in the educational department. The work upon them is charged at regular time at actual costs. Some of the students, who had previous experience with cars, proved apt pupils and they graduated quickly into the main repair department. Experiments are being made with special tools, and these will be added to the equipment.

**BREWER MOTOR CAR CO.**  
DISTRIBUTORS EASTERN WASHINGTON AND NORTH  
IDAHO

**SAXON**

TELEPHONE MAIN 121  
COR. SPRAGUE & JEFFERSON  
SPOKANE, WASH.  
March 26, 1918

SAXON CAR DEPARTMENT

Mr. George Baldwin,  
Service Manager,  
Saxon Motor Car Corporation,  
Detroit, Mich.

Hello, George:

Your letter of the 7th came, and  
that it was a pleasure to hear from you.

C. F. BREWER, Pres.  
J. G. BACON, Vice Pres.

SILVERTOWN  
AND  
SAFETY TREAD  
TIRES

**BREWER MOTOR**  
Bacon, Cole and Westcott Cars - Fargo  
Truston Truck Attach  
Cor. Sprague and Jeff  
Spokane, Wash.  
March 26, 1918

Mr. J. D. Riker,  
Cole Motor Car Company,  
Indianapolis, Ind.

Top 's the Morning, Mr. Riker:

I thank you very much for your  
letter, because it gives just the  
for which I asked, and I want  
here, brother Riker, that this  
facility which you seem to have  
that of giving a call.

**BREWER MOTOR CAR COMPANY**

C. F. BREWER, President  
J. G. BACON, Vice President  
FRED B. HUFFMAN, Secretary  
W. L. McCABE, Treasurer

DISTRIBUTORS FOR WASHINGTON,  
EAST OF CASCADES, NORTHERN  
IDAHO & NORTHWESTERN MONTANA

**WESTCOTT CAR DEPARTMENT**

Mr. P. W. Runyan,  
Publicity Expert,  
Westcott Motor Car Company,  
Springfield, Ohio.

How-do-you-do, Mr. Runyan:

That fine leather sample case which you made  
for me just arrived, and I want to thank you  
very much, indeed, for it. It is absolutely

There's everything in a greeting. The Brewer Motor Car Co. never uses the time-worn "Dear Sir." Instead, the salutation is made breezy and intimate, and of course it always fits the person to whom the letter is addressed. Look these over

# MOTOR WORLD GUIDE

Specifications  
of the  
Leading Cars

Revisions Are  
Made in Table  
Every Week

Model	Motor	S. A. E.	Ignition	Carburetor	Starting	Clutch	Gearbox	Wheelbase	Tires	Rims	2-Door	5-Door	7-Door	Coupe	Sedan	Limousine	Detachable Top
ABBOTT 6-33	6-31x24 29.4 Remy		Stmbe	Remy	DD	3	122	24x4 SS			\$1875	...	\$1875	...	\$2375	...	...
ALLEN Series 41	4-31x25 22.5 Conn		Stmbe	A-Lite	D	3	112	32x4 SS			11145	\$1195	...	\$1295	1295	...	...
AMERICAN B	6-31x25 22.4 A-Kent		Stmbe	West	DD	3	122	32x4 SS			1645	1695	1695	...	...	...	...
ANDERSON 20	6-31x24 25.3 Conn		Stmbe	West	DD	3	120	32x4 SS			**1465	...	...	...	...	...	...
400-F	6-31x24 29.4 Bosch		Stmbe	West	DD	3	120	32x4 SS			**1925	...	...	...	...	...	...
APPLESON 6-18	6-31x25 22.8 Remy		Stmbe	West	DD	3	120	32x4 SS			12350	...	...	...	...	...	...
Autumn											12350	...	...	...	...	...	...
AUBURN 6-39-B	6-31x24 25.3 Remy		Stmbe	West	DD	3	120	32x4 SS			1445	1445	...	...	...	...	...
6-44	6-31x24 29.4 Delco		Stmbe	West	DD	3	120	32x4 SS			...	1795	1795	...	...	...	...
AUSTIN 188	12-31x25 39.6 Delco		Stmbe	West	DD	3	122	32x4 SS			3750	3750	4000	4550	5000	5350	...
BELL 18	4-31x24 22.5 A-Kent		Stmbe	West	DD	3	114	31x4 QD			1150	1150	...	...	...	...	...
BIDDLE H	4-31x24 22.5 Esmann		Stmbe	West	DD	3	121	32x4 QD			2700	...	...	...	...	...	...
BOUR-DAVIS 188	4-31x24 22.5 West		Stmbe	West	DD	3	118	32x4 QD			...	1785	...	...	...	...	...
BREWSTER 4-4	4-31x24 25.6 Bosch		Stmbe	West	DD	3	125	32x4 SS			7200	7700	...	...	...	...	...
BRISQON B-4	4-31x24 16.3 Conn		Stmbe	West	DD	3	104	30x4 C			885	885	...	...	...	...	...
BUICK 24-34-35	6-31x24 27.3 Delco		Stmbe	West	DD	3	118	32x4 SS			795	795	...	...	...	...	...
24-45	6-31x24 27.3 Delco		Stmbe	West	DD	3	118	32x4 SS			1265	1265	...	...	...	...	...
24-49	6-31x24 27.3 Delco		Stmbe	West	DD	3	124	32x4 SS			...	...	...	...	...	...	...
CADILLAC 87	8-31x24 31.2 Delco		Stmbe	West	DD	3	125	32x4 SS			3520	16320	2520	...	...	...	...
CASE U	6-31x24 29.4 West		Stmbe	West	DD	3	125	32x4 SS			11875	1875	1875	...	...	...	...
CHALMERS 8-40	6-31x24 25.3 Remy		Stmbe	West	DD	3	117	32x4 SS			1565	1565	1615	1975	2250	2925	...
CHANDLER 400	6-31x25 29.4 Bosch		Stmbe	West	DD	3	122	32x4 SS			11795	11875	1795	2095	2495	3095	...
CHEVROLET 400	4-31x24 21.7 Remy		Stmbe	West	DD	3	102	30x4 C			715	735	...	...	...	...	...
PA	4-31x24 21.7 Remy		Stmbe	West	DD	3	108	32x4 SS			995	995	...	...	...	...	...
D	8-31x24 36.4 Remy		Stmbe	West	DD	3	120	32x4 SS			11560	1595	...	...	...	...	...
COLE 870	8-31x24 39.3 Delco		Stmbe	West	DD	3	127	32x4 SS			2595	12995	2595	3795	2495	...	...
COLUMBIA CAD	6-31x24 25.3 A-Kent		Stmbe	West	DD	3	115	32x4			11995	1550	...	...	...	...	...
COMET C-50	6-31x24 29.4 Delco		Stmbe	West	DD	3	125	32x4			...	...	...	...	...	...	...
COMMONWEALTH 4-40	4-31x25 19.6 A-Kent		Stmbe	West	DD	3	115	32x4 SS			1995	1095	...	...	...	...	...
CROW-ELKHART CB-36	4-31x25 19.6 Conn		Stmbe	West	DD	3	114	32x4 SS			1095	1155	1095	...	...	...	...
CUNNINGHAM 8-25	8-25x25 45.0 Delco		Stmbe	West	DD	3	122	32x4			...	...	...	...	...	...	...
DANIELS B	8-25x25 33.8 West		Stmbe	West	DD	3	127	32x4 QDR			3509	3509	3509	...	...	...	...
DAVIS H.L.	6-31x24 25.3 Delco		Stmbe	West	DD	3	119	32x4			...	...	...	...	...	...	...
J.I.	6-31x24 29.4 Delco		Stmbe	West	DD	3	125	32x4			...	...	...	...	...	...	...
DIXIE FLYER 1298	4-31x25 16.9 Conn		Stmbe	West	DD	3	112	32x4 SS			1095	1095	...	...	...	...	...
PACKARD 3-25	13-3 x5 45.2 Delco		Stmbe	West	DD	3	126	32x4 QD			...	...	...	...	...	...	...
3-25	13-3 x5 45.2 Delco		Stmbe	West	DD	3	126	32x4 QD			...	...	...	...	...	...	...
PAIGE 6-39	6-31x25 23.4 Remy		Stmbe	West	DD	3	117	32x4 SS			...	...	...	...	...	...	...
6-55	6-31x25 29.4 Remy		Stmbe	West	DD	3	127	32x4 SS			...	...	...	...	...	...	...



[illegible]

8-размер. 14-размер. 12-размер. 16-размер.

11

ABBREVIATIONS—"A. Ken" Atwater Kent, "A. Lite" Auto-Lite, "B. & Ball" Ball & Ball, "Cons" Connecticut, "G & D" Gray & Davis, "Elsman" Elsmann, "L.N" Leese-Neville, "N. E." North East, "Newcomb" Newcomb, "O. M." Owen Magnetic, "Rand, Rayfield, Spittorf" Rand, Rayfield, Spittorf, "T.M." Tilttop, "Watus" Westinghouse, "W. Lard" Ward Leonard, "D." Disk, "DP" Dry Disk, "P." Plate, "TDP" Dry Plate, "C" Case, "Fr" Friction, "G." Gearless, "Control Unit," "Mag" Magnetic, "SS" Straufgasse, "QD" Quick Detachable, "C" Clincher, "DC" Detachable Clincher, "QDR" Quiet Detachable Reversible, "U" Universal, "R & M" Robbins & Myer. NOTE—37½-53½ means that the rear tires are 37½% and the front are smaller. Detachable top, 300x, means \$300 extra.

## Gasless Sundays for Several Weeks More

### Fuel Administration Says Reserve Is Being Depleted—Senators Ask What It's All About

WASHINGTON, Sept. 14—Gasless Sundays will continue for some time yet, according to an announcement by the Fuel Administration made yesterday. Automobile owners are requested to keep their cars in the garages Sundays until the gasoline reserves are further built up at Eastern seaboard points.

Fuel Administrator Garfield stated yesterday that on Aug. 24 there were 645,000 barrels of gasoline at Atlantic ports. This was the total amount available for export and domestic use. The requisition of tankers for export withdrawal that day were 616,000 barrels, leaving only 29,000 barrels for domestic consumption in that territory.

Testimony regarding gasoline was given by Judge J. H. Covington, counsel for the National Petroleum War Service Committee, to the Senate Finance Committee yesterday. "Sixty thousand barrels of crude oil are being drawn daily from the reserve that was built up by oil producers," stated Judge Covington, "and if it had not been that a great reserve had been stored up the country would have felt the effects of a serious shortage before this time."

"All proposed taxes as affecting oil and gasoline prove burdensome, and at this time oil and its by-products should be exempt from sale and other taxes that would tend to decrease production and drive oil dealers out of business."

Senator Penrose questioned Judge Covington at length, asking him if the figures on oil production, consumption and reserve furnished by the Fuel Administration were correct. Covington stated that he did not know but that figures compiled by the oil men show a substantial shortage in crude oil.

Senator Penrose stated his intention of calling members of the Fuel Administration before the Senate to explain the reason for Sunday gasoline restrictions, and especially why it applies only east of the Mississippi River. He asked Judge Covington for a reason for the territorial division, and the witness said he could not give a reason.

"This gasoline order," said Senator Penrose, "is the result either of the petty vanity of an upstart or else ulterior motives not yet disclosed."

The Senator further explained that the miners in Pennsylvania, unable to enjoy their automobiles on Sundays, are taking off Saturdays or Mondays and slowing down production of coal.

### No Truck Show for St. Louis

ST. LOUIS, Sept. 15.—There will be no truck and tractor show in St. Louis this fall. That was the decision reached at the weekly meeting of the Commercial Car and Service Association. The chief

reason is that local branch managers and dealers fear they cannot get a surplus of trucks to make an exhibit. They are selling more than they can deliver as it is. Another reason is that there is no building available and the truck men fear the Government would not look favorably upon the plan to ship a tent around and engage labor, etc., to erect it.

A tractor show was suggested but passed because tractors are a bit scarce and the season would be over before a show could be staged.

The Association named a committee whose duty it is to bring into this body each commercial car dealer and service station owner in St. Louis. Just what sort of a draft bureau will be organized has not been disclosed by Allen Baker, chairman of the committee.

### Velie Develops Kerosene Carbureter

MOLINE, Sept. 14—The Velie Motors Corp., following a series of tests with a kerosene device for its passenger cars here last Monday, has decided to start manufacturing the device, which it will sell to other makers of cars, the United States Government and to Velie owners. It is not new to the Velie company. It was used first on Velie tractors. Then it was further developed for trucks, and now it has been further perfected for passenger cars. The tests last Monday were very severe. There were present as observers some of the big distributors, and they rode in the cars to note at close hand how the device worked.

## War Board Says It May Order Closing

### Tells Vesper It Is Considering Issuing Command with Penalty Attached for Sunday Shut-down

ST. LOUIS, Sept. 16.—A letter from the War Industries Board to President Vesper of the N. A. D. A. indicates that the proposal of making official the Sunday closing of oil and service stations is receiving the serious consideration of that body. The letter implies that the order is likely to be made with penalty attached.

### To Distribute Tractor Nationally

MILWAUKEE, Sept. 16—The Leavitt-Webster-Smith Co., Janesville, Wis., has been organized by R. H. Leavitt, Daniel Webster and W. G. Smith to market the entire output of the Townsend Mfg. Co., Janesville, manufacturer of tractors, gas engines, etc. All of the members of the new distributing interest were formerly connected with the sales organization of Fairbanks, Morse & Co., Beloit, Wis., and Chicago. The Townsend company makes a tractor rated at 12-25, but is adding a larger model, rated at 20-40. It also builds stationary engines, so designed that the owner may purchase a tractor chassis later and install the engine.

## Coming Events

### Conventions

Syracuse, N. Y.	Semi-annual meeting of the American Gear Mfrs. Assn.	Sept. 19-21
Chicago, Ill.	Convention	Oct. 28-Nov. 2
	National Association of Automobile Accessory Jobbers	

### Tractor Demonstrations

Greely, Weld Co., Col.	Tractor show	Sept. 8-20
	Central Community Fair.	
Canada		Sept. 17-18-19
Riverhead, L. I.	County Fair, Harry Lee, Secy.	Sept. 17-20
Trenton, N. J.	Trenton Fair, Harry B. Salter, Supt.	Sept. 30-Oct. 4
Harrisburg, Pa.	State Fair	Sept. 19-21
Washington, Ga.	Wilkes County	Oct. 1-5

### Expositions

Chicago, Ill.	Automotive and Accessories	Sept. 14-21
	War Exposition, Municipal Pier. H. V. Buelow, Managing Director.	
Springfield, Mass.	Eastern State Exposition	Sept. 15-21
Leavenworth, Kan.	State Fair	Sept. 16-21
Nashville, Tenn.	State Fair	Sept. 16-21
Sioux City, Ia.	Interstate Fair	Sept. 16-21
Billings, Mont.	Midland Empire Fair	Sept. 16-21
Memphis, Tenn.	Tri-State Fair	Sept. 21-26
Okla. City, Okla.	State Fair	Sept. 21-28
Boise, Ida.	State Fair. J. C. Wooley.	Sept. 23-28
	Moscow, Ida.	
Chattanooga, Tenn.	Eastern Tennessee District Fair	Sept. 30-Oct. 5
Birmingham, Ala.	State Fair	Oct. 1-12
Kansas City, Mo.	American Royal	Oct. 7-12
Richmond, Va.	State Fair	Oct. 7-14
Atlanta, Ga.	Eastern State Fair & Automotive Exhibition	Oct. 12-19
Dallas, Tex.	Seventh Annual Texas Automobile Show	Oct. 14-27
	Texas State Fair.	
Macon, Ga.	State Fair	Oct. 30-Nov. 9
Shreveport, La.	State Fair	Oct. 28-Nov. 4

HORSELESS AGE

The oldest automotive paper published in the English language has been purchased by The Times-Journal Co. Its merchandising features, and a part of its circulation, have been merged with

MOTOR WORLD

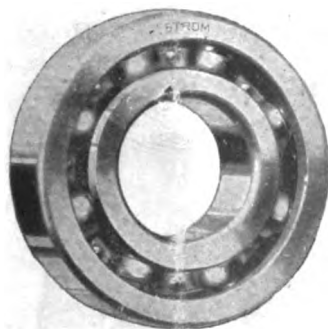
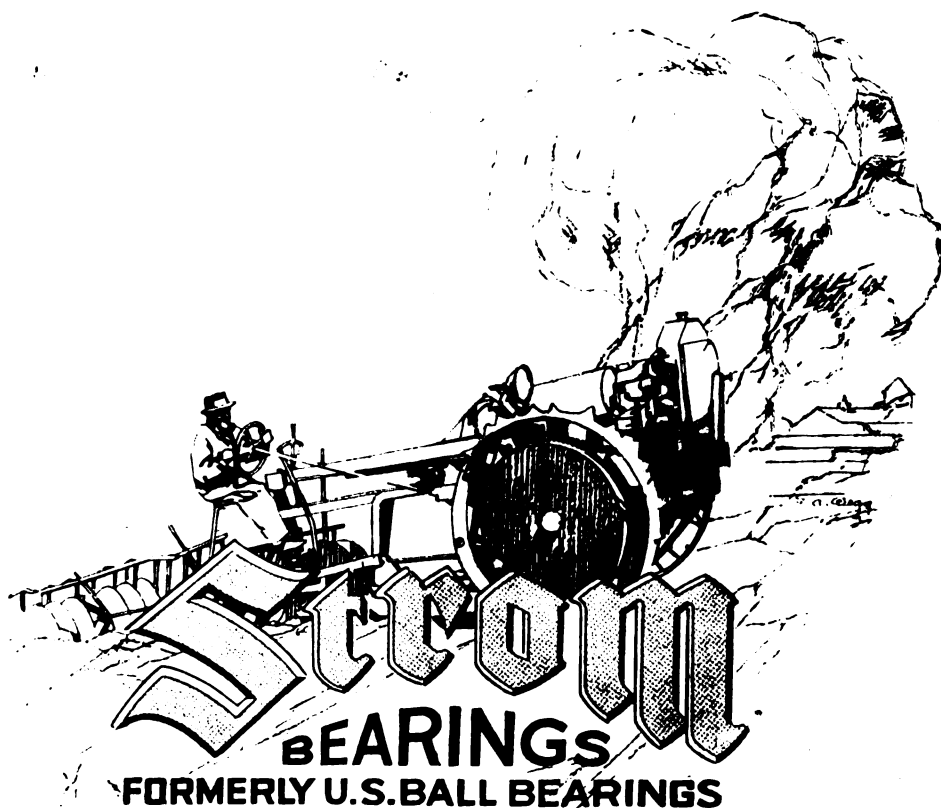
# MOTOR WORLD

for  
DEALERS, JOBBERS AND GARAGEMEN

Volume LVI  
No. 13

PUBLISHED WEEKLY AT 239 WEST 39th STREET  
NEW YORK, SEPTEMBER 25, 1918

Fifteen cents a copy  
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U. S. BALL BEARING MFG. CO., (Conrad Patent Licensee) CHICAGO, ILL., U. S. A.

## Long Field Experience Behind this Crawler

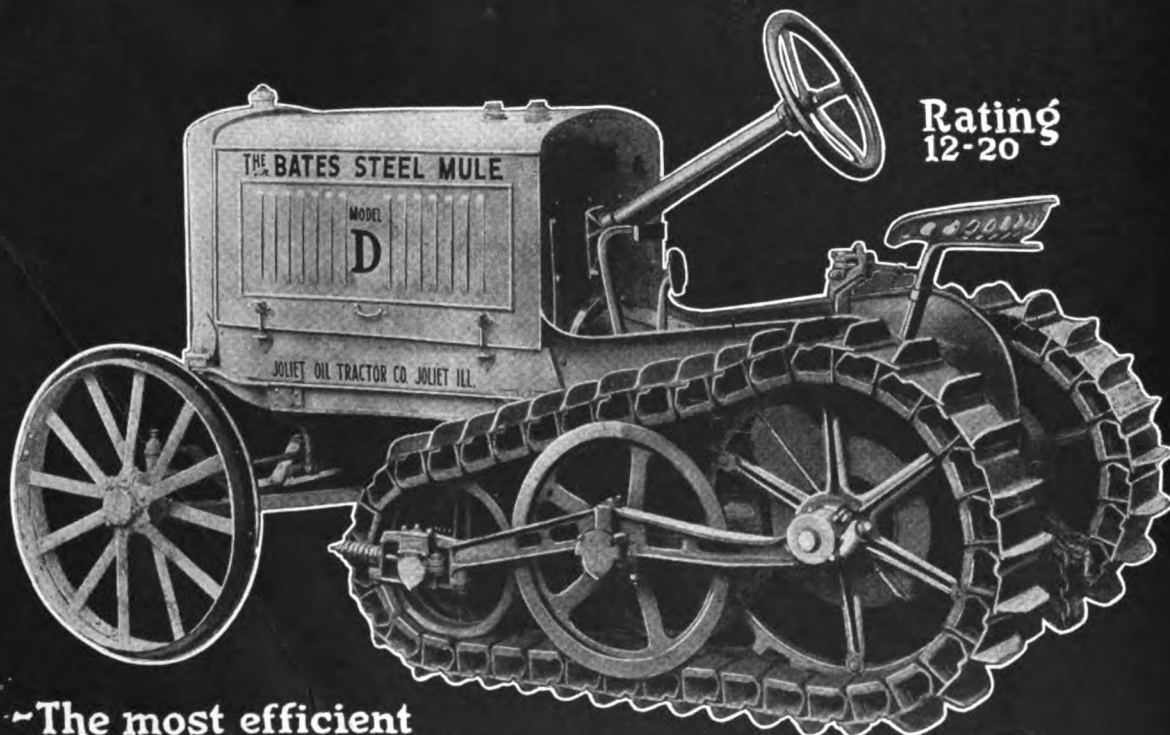
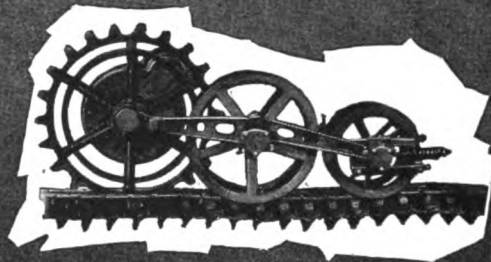
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*Of course our output is continually oversold, but every little while we add a few more good dealers as we increase production.*

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377 Jackson Street Joliet, Illinois



**Rating  
12-20**

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# MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

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and 5-ton  
Models

All  
Worm  
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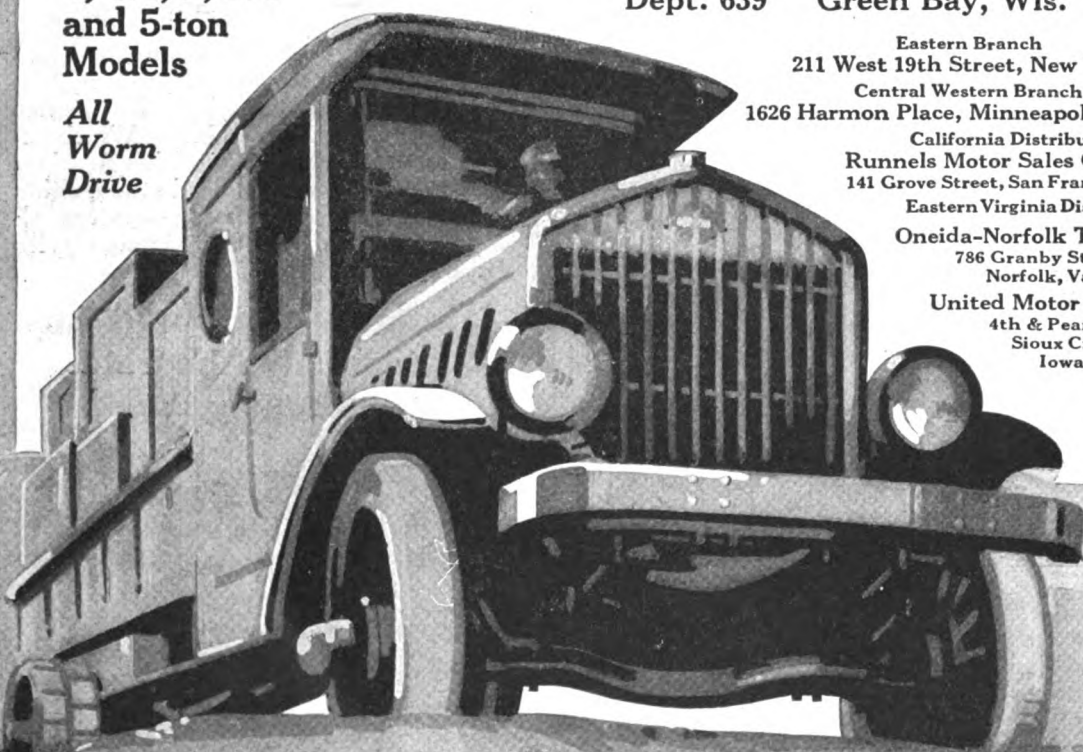
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## The Dealer Who Knows

**C**ONDITIONS developed by the war have made many changes in the conduct of your business. Further changes will be necessary if you continue successful as dealer, jobber or garage owner.

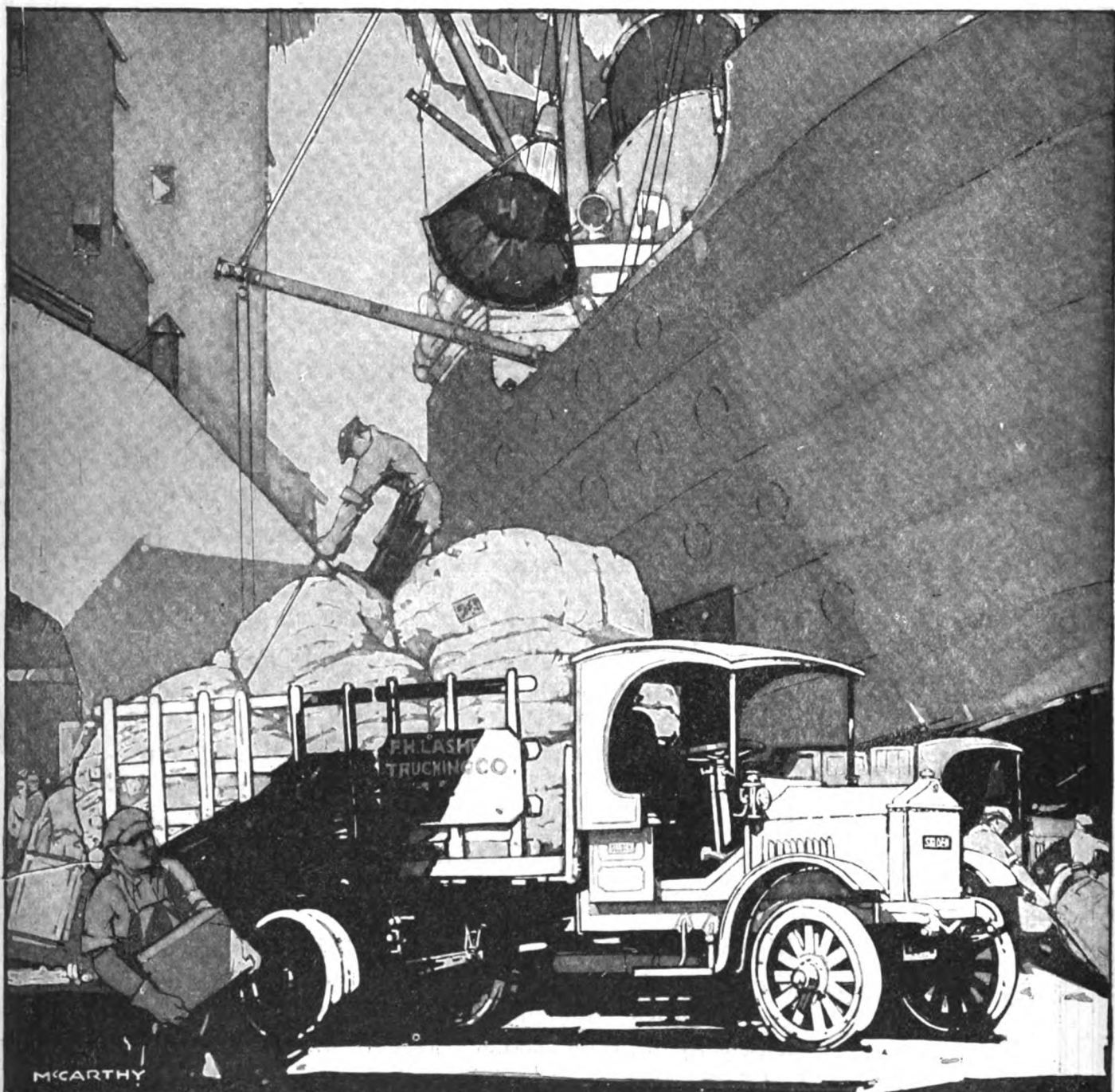
What other changes are in immediate prospect? And what is the most reliable guide and the best influence to govern you in making those changes?

We are trying to make **MOTOR WORLD** a useful and dependable ally for you. We want our service to be absolutely indispensable to the men throughout the trade who are the thinkers and the doers.

Manufacturers use **MOTOR WORLD** to carry their merchandise and merchandising messages to you because they believe, as we do, that our upwards of 25,000 dealer, jobber and garage owner subscribers are the best thinkers in the trade.

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Whenever **THE POWER TO ENDURE CONTINUOUS HARD SERVICE AT LOW OPERATING COST** was the requirement of the hauling job, no Selden Truck ever failed to render **PROFITABLE SERVICE.**

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# MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

Vol. LVI

New York, U. S. A., Wednesday, September 25, 1918

No. 13

I GOT 'EM !



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*THE ARMY WILL*

# KEEP PUSHING

*If You*

## BUY MORE LIBERTY BONDS

---

EVERY day when we read in the newspapers about how the American boys in France are getting closer and closer to the Rhine we utter a fervent "Thank God!" and, like spectators at a football game, whisper: "Keep pushing!"

And the Boys, through General Pershing, send back their answer to us: "We will keep pushing just as long as you folks at home back us up. You've backed us up and helped us so far, but we have spent the money and now you must **"Buy More Liberty Bonds."**

When we bought bonds of the first, second and third loans we hardly knew what it was for.

We knew that somehow, somewhere, sometimes there would be an army in France and that the Germans would be shown what a free-born man can do against the brow-beaten soldier of Kaiserism, but we little thought we should get so much for our money as we have been getting during past weeks.

We bought tickets to a show, without knowing how good the show would be, and now that we've gotten our money's worth we want more of the same thing.

We have helped buy the guns and supplies and the ships that have put nearly 2,000,000 men in France and we have backed them up until they are within hitting distance of the Rhine, but if they are to go much farther there must be more financial backing.

An army can't fight without money, and the only place the American army can get money is from the American people, and that is you and the rest of us.

We are the financiers and promoters behind this great army.

They say the fourth loan will be about \$6,000,000,000, which is about twice as big as the previous loans. This means that we must do twice as much as we did on the previous loans.

It means that men must mortgage their incomes, that they must buy bonds that they can't pay for until several months have passed. Many people did that on previous loans—but not enough.

Clyde Myton, who manages the Harrisburg dealers association, and who is managing the fourth loan in that city, said a lot when asked what was the big sales idea in the fourth loan. He said: "It is Save to Buy. We must teach men with incomes to save to buy. It is not enough when they buy bonds outright. They must buy from their as yet unearned incomes."

What did YOU do on the last loan? Did you buy what you easily could, or did you stretch a point and borrow and save to buy? Remember: This is the biggest issue yet. It means powerful support from the whole trade.

Unless your trade is being adequately organized and canvassed by the local organization **ORGANIZE YOUR OWN TRADE.** Name a chairman, a trade

committee, team chairmen, unit chairmen and have each dealers organization organized right down to the last man.

Each dealer should organize his business by departments. Make every department head a chairman for loan work. Don't be autocratic and create bad feeling, but talk confidentially with each employee, and make sure that no employee is shirking responsibility in this matter.

Hold frequent meetings of your organization and departments. Tell them what they are buying, and what is being done with their money. Make plain every one's duty.

The New York dealers are going to hold some big meetings. They are going to make a big effort to put their quota over. They did it the last time when some folks said it couldn't be done and they're going to try again.

Philadelphia's committee is asking 2000 car owners to lend cars for carrying speakers and loan workers.

Bristol, Conn., has written to Motor World to borrow some of the cartoons used in this paper. Everywhere the work is beginning.

Get YOUR town and YOUR house started.

President  
Wilson Has  
a Word to  
Say to You



What Will  
Be Your  
Answer to  
Him?



THE WHITE HOUSE  
WASHINGTON

Again the Government comes to the people of the country with the request that they lend their money, and lend it upon a more liberal scale than ever before, in order that the great war for the rights of America and the liberation of the world may be prosecuted with ever increasing vigor to a victorious conclusion. And it makes the appeal with the greatest confidence because it knows that every day it is becoming clearer and clearer to thinking men throughout the nation that the winning of the war is an essential requirement. The money that is held back now will be of little use or value if the war is not won and the selfish masters of Germany are permitted to dictate what America may and may not do. Men in America, besides, have from the first until now dedicated both their lives and their fortunes to the vindication and maintenance of the great principles and objects for which our Government was set up. They will not fail now to show the world for what their wealth was intended.

Woodrow Wilson

# Dealer Should Prepare For the Tractor Demonstrations

*If He Doesn't He Is Likely to Give His Tractor Some Bad Marks Which Really Are Not Justified—The Proverbial Ounce of Prevention Applies with Great Force*

**H**ARRISBURG, PA., Sept. 23 —At the tractor demonstrations held near this city last week and the first days of this week there is one big fact apparent.

It is that the dealer or other entrant who contemplates putting a tractor into a tractor demonstration should exercise a great deal of care before so doing. He should be all ship-shape and ready for the test, else he is likely to make a showing which months of sales effort cannot live down.

If a tractor doesn't show up well in a demonstration it is often the fault of the operator or because of some neglected adjustment, whereas the tractor itself may be one of the best machines in the market.

And if the farmers who come to look see some machine doing poor work they acquire prejudices which may do the dealer harm and which may cost him many dollars of sales work, whereas a little preparation for the test would be inexpensive in comparison.

#### What Poor Preparation Did

There was in particular one tractor at the Harrisburg tests. It is a good machine as most of the men of competing makes will admit. It can plow and plow well—as was proved later in the demonstration. But during the early part of the test it did not plow well—and

it wasn't the fault of the tractor at all.

The fault lay with the driver, and back of that the fault lies with the dealer who put this driver into the test without schooling him. The driver can hardly be blamed.

This driver is a mechanic—and a good one. He is the foreman in a service station. He was selected to drive a tractor in a minor demonstration some weeks ago, and, because of that, was chosen to drive the tractor in this Harrisburg test.

He could handle the machine fairly well, but he was not familiar with the handling of the plows. The trouble lay in a hard road at one end of the field, where army trucks have been driving for weeks and where the soil was packed down and baked into a very hard mass.

#### Operator Must Know Plows

All of the tractors had to plow across this road. The experienced operators made it all right. They would walk right through this road as though it were not there, and the farmers were impressed with the manner in which the machines performed.

But this particular tractor would hit the hard road and the plows would come out of the ground. The operator, not knowing what caused the trouble, would look back over his shoulder and go right on. He did this several times, and then the dealer sent for the plow expert. The

expert came in a hurry, as plow experts do at affairs of this kind.

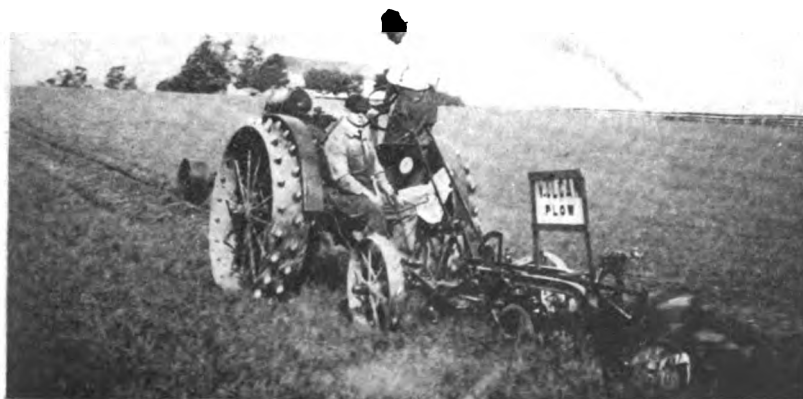
He told the driver to give one of the adjustment levers a yank before going into this road and to push it back after getting through the road.

The driver did it and for the rest of the plowing the plows tore up the road as well as any of the competitors. But the farmers all looked at this road that had not been plowed in spots. Some of them had never seen tractor plows at work before. They did not understand the adjustments. They did not know that the fault lay in the plow adjustment and not in the tractor and so they sorrowfully shook their heads and made derogatory comment. At the same time they looked at another that was performing wonderfully.

The operator was an expert. No one had to tell him how to plow. He had done it many times. When he saw the hard road he knew just what to do and the result was that after he got through no one could tell in what part of his plot the road had been.

#### He Could Plow Straight

Furthermore, this operator could plow straight. When he started in he went across the field as straight as a taut string. His furrows were nice and even. It was a beautiful job. If the looks of the finished job are to count in the Harrisburg territory this tractor will have a good standing.



The Allis-Chalmers (left) and the Moline (right) plodding across the field at Harrisburg in the test to see which entrant could first complete three hours of plowing





*General view of the starting line just before the signal which started the machines plowing the 42-acre field at Marsh Run, near Harrisburg, Pa.*

This operator knew that his machine would follow the furrow without guidance when the going was good, so when he struck a long, straight stretch he would get off and walk around the field, get a drink of water, light a cigarette and do all sorts of tricks. To the farmers it looked as though this tractor ran so well that the operator really felt bored with the afternoon's work. Yet most of the other tractors on the field are probably as capable of giving service as this one.

His luck was with him. His plows didn't happen to hit a stone while the tractor was running alone; he kept his weather eye out for possible trouble, and he never stopped from the time he started until he finished his job. The result is that the dealer handling this make will have some fine sales talks to hand out around central Pennsylvania fire-sides this winter—and they will help him make sales. The work that this operator did has cut the dealer's sales expense at a time when every cent saved counts big.

#### Need of Skilled Operators

There were other tractors on which the operators could have been more skilled. They were good mechanics but they were not expert tractor operators. Some of them also had a highly developed sales instinct. One of them, when he saw a spectator looking at the motionless belt wheel, gave a little lever a hitch and the belt wheel began to spin. He had anticipated the observer's question and answered it without saying a word. It made an impression to have this wheel begin to spin at the very time that the would-be questioner was thinking about it and getting ready to ask a question.

Improper inspection before coming onto the field may or may not have been the cause of mechanical trouble that developed in some of the other tractors, although there was comparatively little mechanical difficulty. Yet a rigid inspection should always be made, just as in the early days of the motor car the cars used to be put into condition and diligently guarded all night before going into a contest or race the next morning.

Some of the dealers at Harrisburg had

their sales scouts out at the demonstrations, and this also is a highly essential part of tractor merchandising.

Some of them sent letters to their prospects several days before the demonstrations, asking prospects to come and see the machines work, and one dealer tried to bring some of his hard prospects to the grounds in the dealer's car.

The excuse generally made by prospects for not coming was that they were too busy, which lays all the more emphasis on the need for sales work at the tractor grounds. The farmer who leaves his work to see a tractor demonstration is by that very fact expressing interest, and he is too valuable to be passed up.

Therefore dealers should get their salesmen to the demonstration grounds. They should be armed with cards for making records, with literature, with data that may be needed, and should be fully prepared to get the prospect into line if there is opportunity.

The salesmen should station themselves at the location where the farmers congregate, and should get in touch with

as many as possible. Instead of a cosy corner for talking sales it is easy to take the farmer for a walk up the field to show him the furrow and thus get him into the privacy of an open field, which privacy is the equal of any closing room ever invented in many respects.

The use of literature is a highly important point. One of Harrisburg's leading dealers has great piles of it, much as motor car literature is put out. In fact, his tractor is put out by old motor car men who are applying their car methods to their tractor merchandising.

The observance of a demonstration reveals many angles of tractor merchandising. It is a new sales field. But it is a wonderful field. Tractors will be sold in the East as well as the West, and dealers everywhere should look into the possibilities of this coming line and—once in—utilize those modern methods which will fill the country with tractors as it is now filled with cars.

Merchandising has sold cars. It will sell tractors. And the dealer who starts off right will get a big jump on his competitors.

## *Fuel Consumption and Plowing Speed Featured at Harrisburg Tractor Demonstration*

**HARRISBURG, PA., Sept. 24**—The fact that the amount of fuel consumed and the speed with which the tractors were able to pull the plows were taken into account made the tractor demonstration held at Marsh Run, about 5 miles from here, one of the most interesting and instructing of any demonstration held so far in the country.

This demonstration was fostered by the Pennsylvania State Department of Agriculture, and the original program called for plowing on Thursday and disking and planting on Friday and Saturday. This program had to be altered, however, as there was considerable delay in getting fuel the first day and the tractors were unable to start off till 3.30 p. m. This hardly gave time to finish plowing the land and not more than half the tractors had plowed their plots by sundown.

It was intended that the ones who had not finished were to complete their work

early Friday morning, but a heavy down-pour of rain, which lasted from midnight Thursday till midnight Friday, made any work on Friday impossible.

One of the requirements of the officials was that each tractor carry a sign giving the rating, weight, price and other details. These signs were most instructive and marked a step in advance in Eastern demonstrations. The kind of fuel was plainly indicated.

Although rain interfered seriously with the demonstrations several parts of the demonstration program were completed, on a delayed schedule, and the department has issued a very comprehensive report covering the plowing done during a part of the demonstrations. This report is of special value because an official observer accompanied each tractor during its entire test and his records of the time consumed in the plowing, the speed of the tractor, as well as fuel consumed.

The plowing was done on a fairly level



*The Reed tractor with the observer keeping tabs*



*The Waterloo Boy pulled a John Deere plow*

field, 6 miles from Harrisburg on what is known as Marsh Run, which is a tract purchased by the Federal Government for one of its large storage depots. The plowing was done in a 42-acre field in which the furrows were 76 rods long. Practically two-thirds of this field was in sod and the remainder in corn stubble which was overgrown with weeds that were 3 ft. in height. The ground had been very dry and hard, but due to a heavy rain the day before the plowing, it was in fair condition.

Fifteen different tractors took part in the plowing. Each was given a definite area to plow which varied from approximately 2 acres to almost 5 acres. The area was computed by taking into consideration the speed at which the tractor manufacturer advertises his tractor to plow it, the number of plows it pulls, and the width of the furrow turned by the plows.

Because of this, practically every tractor had a specific area. It was estimated that each tractor if it plowed at its rate of speed would complete the work in exactly 3 hr. Several of the machines came very close to this schedule. The Frick completed its area in 3 minutes under the 3 hr. The Parrett was 5 minutes over the 3 hr. The new International Harvester tractor, with a vertical four-cylinder engine was 5 minutes under the 3 hr. The small Case, with 9-18 rating, was 16 minutes longer than its schedule. The Titan was 8 minutes over its schedule. The Waterloo Boy was 13 minutes over schedule, and the Allis-Chalmers was also 13 minutes above schedule.

These times include stops due to plows clogging, and other tractor stops, so that

all of those mentioned could really be considered living up to their advertised speed of plowing under average conditions.

With the exception of three or four tractors that were plowing in the high weeds, the ground was very clean, free from stones, and without hills. The soil was damp because of the rains and plowing conditions practically ideal. Those that had to operate in the high weeds were I. H. C., Cleveland, Parrett, E-B, and Knickerbocker. The Cleveland in particular had a hard task, as a portion of its area was rough ground from which a fence had been removed only the day before the trials. The Cleveland lost a great deal of time because of this and had 19 minutes of recorded tractor stop due to clogging of the plows. This does not represent the entire loss of time due to this trouble, as there were many stops of a few seconds each that the official observer did not record.

Emerson-Brantingham, which also plowed in the weedy ground, lost 39 minutes due to plow stops. The I. H. C. lost 6 minutes due to plow stops.

The attached tabulation, which is a copy of the official report issued by the Department of Agriculture for the state, shows how closely many of the tractors operated to their advertised speed. The advertised speed is shown in one column, and the speed they plowed at in the following column. This plowing speed includes all time required in turning at the ends.

This information and the fuel consumption were of great interest, as tractor demonstrations seem to have passed the point where it is only necessary to demonstrate to the prospect that they

will plow. The buyer not only wants to see the machine at work, but he wants to know how fast it will actually plow in practice and how much fuel it will use.

There were a number of rules that had to be followed by the participants, among which was one that the plowed furrow should be a minimum of 6 in. in depth. The observers frequently tested this point with measuring sticks.

The fuel consumption was generally higher than was anticipated. Kerosene and gasoline were furnished from tank wagons so that all had the same grade of fuel. Practically all of those using kerosene consumed a certain quantity of gasoline for starting purposes. Some used a quart and others more than a gallon.

There were remarkably few troubles with the tractors. Seven out of the twelve did not have a single stop due to any trouble with the tractor itself. The Reed was compelled to, due to clutch troubles. There were a few cases of spark plugs having to be changed, and others of carbureters to be adjusted.

#### A Message for Ford Dealers

ST. LOUIS, Sept. 16—Here is a message for the Ford dealers of this country from R. J. Williams, of the Lalley-Brockman Lighting Co. Williams is one of the pioneer unit lighting plant salesmen of this country. He sold acetylene lighting outfits six years before he took up the electric. His message is this:

"When I read a few days ago that Ford has given up the making of passenger cars for the period of the war, I thought: 'Too bad I cannot see each one of his dealers personally and tell

#### Results of the Tractor Demonstration at Harrisburg

Name	Rating	Plows No.-Size	Entered Speed, m.p.h.	Actual Speed, m.p.h.	Acres Plowed	Acres per hr.	Gals. Kerosene per acre	Gals. Gasoline per acre	Total Kerosene Gals.	Total Gasoline Gals.	Gross Time Hrs. Min.	Net Time Hrs. Min.	Tractor Stops Min.	Plow Stops Min.
Emerson-Brantingham	12-20	4-14	2.33	1.74	4.855	.984	2.033	.915	9.875	4.406	4:56	4:15	45	39
Knickerbocker	22	2-12	2.50	1.66	1.908	.403	2.817	2.817	5.375	5.375	4:44	3:59	45	39
Reed	12-20	2-14	2.50	2.31	3.030	.983	3.790	11.500	.125	3:05	3:02.5	..	2.5	
Parrett	12-25	3-14	2.875	2.54	2.121	.719	3.830	8.125	.125	2:55	2:49	..	6.5	
I. H. C.	8-16	2-14	2.50	2.48	2.970	.701	3.210	9.750	.500	4:14	3:47	8	19	
Cleveland	12-20	2-14	3.50	2.21	3.180	.939	2.510	7.000	.500	3:16	3:16	..	..	
Case	9-18	2-14	2.25	2.06	1.908	.584	3.670	9.562	.500	3:23	3:16	..	..	
Huber	12-25	3-14	2.50	2.21	3.180	.939	2.510	9.500	.062	3:08	3:04	..	..	
Titan	10-20	3-12	2.50	2.39	2.727	.870	3.483	15.000	1.1875	5:09	4:45	15	4	
Plowman	15-30	3-14	3.00	1.89	3.819	.741	3.930	9.310	.375	4:10	3:58	3	9	
Plowman	13-30	3-14	2.33	1.76	2.970	.713	3.130	9.000	.250	3:13	3:11	..	2	
Waterloo Boy	12-25	3-14	2.25	2.09	2.862	.889	3.140	6.750	.187	2:57	2:55	1	1	
Frick	12-25	3-14	2.33	2.33	2.925	.991	2.307	8.446	.625	3:13	3:08	..	5	
Allis-Chalmers	10-18	2-14	2.25	2.09	1.908	.593	4.420	9.437	4:05	3:55	2	8		
Moline Universal	9-18	2-14	3.50	2.57	2.97	.727	..	3.180	..	..	..	..	..	



*The Knickerbocker tractor attachment applied to a Ford*



*The Huber had some weeds to turn under*

him to get into the farm lighting business.' So I am doing the next best thing, to my mind. I sent for you that you might tell these dealers through Motor World to make haste and get a farm lighting plant.

"The lighting plant business ought to be easy for a Ford man. The price is about the same. The profit is about the same. The business should appeal to the same bankers that the Ford business did. It just fits all around.

"There is another side that fits. The accessory business in the end is likely to out-run the original purchase. I have seen many a Ford on which the owner has spent \$700. He bought a new body. In the light plant business the buyer will want a power washing machine which will about equal the new body in cost.

"Nearly every Ford buyer bought a starter. Nearly every light plant owner will buy a water plant for his home. Not much added cost.

"The maintenance of a Ford was the strong point. The same is true of a light plant. Not much gasoline and the storage batteries will run from five to twelve years with proper care. The twelve years is a record, however.

"Ford owners are constantly buying locks, horns, speedometers. Sell the light plant buyers irons, electric fans, curling irons, etc.

"The Ford was looked upon, in most cases, as a necessity. The light plant comes in the same class. The field in both is enormous. The successful Ford men knew how to encourage this. They should all get in the business."

### *Several More Gasless Sundays Predicted*

WASHINGTON, Sept. 21—Gasless Sundays will continue for some time yet, according to an announcement by the Fuel Administration made yesterday. Automobile owners are requested to keep their cars in the garages on Sundays until the gasoline reserves are further built up at Eastern seaboard points.

Fuel Administrator Garfield stated yesterday that on Aug. 24 there were 645,000 barrels of gasoline at Atlantic ports. This was the total amount available for export and domestic use. The requisition of tankers for export withdrawal that day was 616,000 barrels, leaving only 29,000 barrels for domestic consumption in that territory.

Testimony regarding gasoline was given by Judge J. H. Covington, counsel for the National Petroleum War Service Committee, to the Senate Finance Committee yesterday. "Sixty thousand barrels of crude oil are being drawn daily from the reserve that was built up by oil producers," stated Judge Covington, "and if it had not been that a great reserve had been stored up, the country would have felt the effects of a serious shortage before this time.

"All proposed taxes as affecting oil and gasoline prove burdensome, and at this time oil and its by-products should be exempt from sale and other taxes that would tend to decrease production and drive oil dealers out of business."

Senator Penrose questioned Judge Cov-

ington at length, asking him if the figures on oil production, consumption and reserve furnished by the Fuel Administration were correct. Covington stated that he did not know but that figures compiled by the oil men show a substantial shortage in crude oil.

Senator Penrose stated his intention of calling members of the Fuel Administration before the Senate to explain the reason for Sunday gasoline restrictions, and especially why it applies only east of the Mississippi River. He asked Judge Covington for a reason for the territorial division, and the witness said he could not give a reason.

"This gasoline order," said Senator Penrose, "is the result either of the petty vanity of an upstart or else ulterior motives not yet disclosed."

The Senator further explained that the miners in Pennsylvania, unable to enjoy their automobiles on Sundays, are taking off Saturdays or Mondays and slowing down production of coal.

### *Reorganize Motor Transport Corps*

WASHINGTON, Sept. 21—Following closely upon the creation of the Motor Transport Corps, new orders inaugurated by Major General George W. Goethals, assistant chief of staff, take the purchase, production and procurement of motorized army vehicles from the new corps and again place these duties under the Quartermaster Department in charge of Colonel Fred Glover who was transferred from supervision of this work less than a month ago.



*The Frick was not so well known, but made a splendid record*



*The Titan did not stop once for tractor trouble*

**GLASER MOTOR EXPRESS COMPANY**  
GREATEST MODERN ECONOMICAL CARRIER

# SAVE

## Food—Labor—Railway Cars

*It may seem to you that we are slow in getting started, but good things always come slow. Glaser Motor Express is a good thing. It is good in several ways. Below is a list of some of the good ways we save and help the boys who are better housed.*

**WE SAVE FUEL**

- By picking up freight at your door and delivering it at customer's door.
- By having our trucks loaded both ways. Getting the maximum from the fuel we do burn. Help us do this, please.
- We save fuel by eliminating the short haul loads by railroads. It takes a lot of fuel, time, and money to switch railroad cars at small towns and villages.

**WE SAVE LABOR**

- By eliminating several loadings and unloadings which you cannot avoid by shipping in railroads.
- By using your truck drivers, your warehouse, your drivers.
- By saving the time and cost of unloading and packing which is necessary in railroad shipments.
- By saving the farmer on the farm producing because we go to his door from your door. It is not necessary for him to leave his farm.

**WE SAVE FOOD**

Because we deliver quicker. We do not have food stuffs spoil in transit. Vegetables, etc., picked in the morning would be delivered 40 to 60 miles every the next morning.

We have loaded several crates of eggs and have not had a broken one. Ask any egg dealer how many are broken by the excessive handling on railway shipments.

We can bring food to market that could not otherwise get there. A surplus of food on any market will lower the price to the consumer.

Your help and co-operation will not only be appreciated by the Glaser Motor Express Co., but by the Council of National Defense and the U. S. Government.

**WE USE THE BEST OF EQUIPMENT**

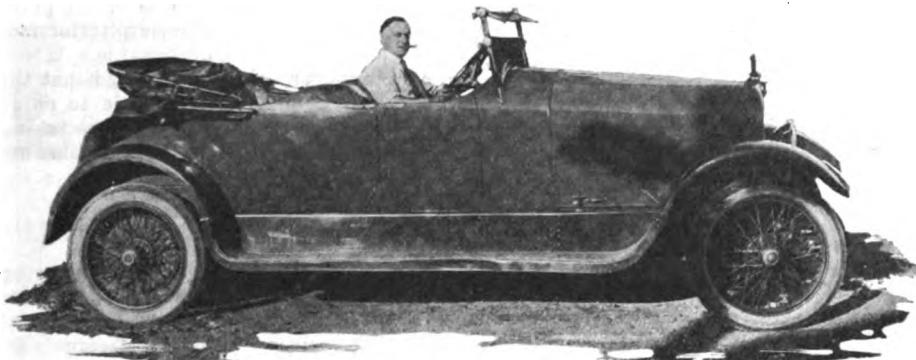
We use service motor trucks manufactured by Service Motor Truck Co., Warren, Ind. because they are strong, sturdy and economical in operation.

We use Troy Four-Wheel Trailers, manufactured by Troy Wagon Works, Troy, O., and King Semi-Trailers, manufactured by King Trailer Co., Ann Arbor, Mich., because we can load 3 times the rated capacity of our trailer loads at only 50 additional cost.

Help us to make this a valuable asset to the City of the South—Chattanooga. We will bring money to Chattanooga that would go elsewhere.

**Glaser Motor Express Co.**  
G. E. GLASER, Owner  
Main Offices 1204 to 1210 Volunteer Life Bldg., Chattanooga, Tenn.

*The extent to which Glaser is pushing the Rural Motor Express business is indicated by the character of newspaper ads he is running. This is a full page*



*G. E. Glaser, the owner and general manager of the business, is on the job in this car from one end of the line to the other. He uses a fast car and keeps in touch with all ends of the business*



*All of Glaser's trucks are given a daily inspection and greasing. This keeps them in good condition and increases the length of life of the vehicles*

## *Glaser Is Pushing* **Rural Motor Express** *In Chattanooga*

*And He Finds It Is a Paying Enterprise and Has Possibilities That Are Attractive to the Automotive Dealer*

*The National Motor Truck Committee, 7 East 42d Street, New York, Samuel A. Miles, manager, and F. W. Fenn, assistant, want dealers to write and ask for information on how to start Rural Motor Express routes, how to fix rates and how to get a paying business started. Drop 'em a line*

G. E. GLASER, of the Glaser Motor Express Co., Chattanooga, G. Tenn., is meeting with success in operating a Rural Motor Express. He has the system organized, with bills like a regular express company, and is doing a good business.

He has sent to the National Motor Truck Committee, at 7 East Forty-second Street, New York, a story of how his business is developing. He says in his letter to the committee:

"I am sending also a sample of the receipts and waybills that I use. These are very simple and as they are all numbered it is very easy to trace shipments and to know if I am getting all my money. I make each driver sign for a pad which contains a certain set of numbers. He must either show the goods, receipt or the original receipt. I use the first duplicate for receipts from agents and drivers who receive a shipment to carry from one sector to another.

"I am putting in a map arrangement that will simplify the matter of figuring rates. This is as per sketch enclosed. We have three rates: general, live stock, etc., and bulky, but light, shipments. It is very easy to get the rate from one town to another by applying the graduated scale to the map. These are in the hands of the printer now, and as soon as finished will send you one.

"I have carried up to this morning just 987 shipments. I will get some letters from merchants, farmers and jobbers telling how they like the rural motor express. These might be of assistance to you."

H. S. Downer, of Hagerstown, Ind., writes: "There are now operating out of Richmond the following lines:

Hagerstown, Richmond .....	Freight
Economy, Richmond .....	Freight
Williamsburg, Richmond .....	Passenger
Lynn, Richmond .....	Freight
Fountain City, Richmond .....	Passenger
Glen Karn, Ohio, Richmond .....	Freight and passenger
Whitewater, Richmond .....	Passenger
Liberty, Richmond .....	Passenger

"The above eight lines use a common truck station with a matron in charge.

"Each line is owned and operated in-





This is one of Glaser's four outfits operating over the Dixie Highway between Chattanooga and Knoxville and Atlanta. A 3 1/2-ton Service truck is drawing a 3 1/2-ton Troy trailer. He finds this combination very serviceable and ample as to capacity

dependent of others. We come to this station in the morning, 'phone our orders to the merchants, then go out and pick up our loads; packages that are brought to this station are placed in a stall under the name of the route consigned to.

"All trucks have a fixed hour for leaving, so that the merchants and public can get goods to us on time.

"The following lines have no station and no fixed point to secure calls or pick up freight or passengers.

Grennsfork, freight and passenger, which operates over a section of my route.

New Paris, freight and passenger.

Centerville, freight. There are two or three others I do not know much about."

Here is a copy of the letter L. A. Rothgates, of the S-R Truck Co. of Denver, Col., wrote to the Bethlehem Motors Corp., Allentown: "The first consideration of consequence seems to be establishing the responsibility of the operator of the express and covering assurance of redress for damage that may be occasioned to merchandise while in transit.

"Another feature is that inasmuch as so much of our territory is sparsely populated the operators of the express line have no difficulty in going out on their various routes with full loads from Denver, but experience trouble in obtaining return loads.

"Another point is the proper charging of rates. There seems to be no established tariff, and while some parties have endeavored to handle merchandise on the same classification rates applicable to the railroad companies, objection has been made by the consignees to their adding a small additional amount covering drayage the consignee would have to assume were the merchandise shipped by a railroad; that is, with the Rural Motor Express the practice is to deliver the merchandise to the door of the consignee, and for this additional service the operator feels that he is entitled to compensation accordingly.

"From our own direct connections we have made sales of three trucks to three parties who are now operating Rural Motor Express Lines."



There are six of these signs scattered around the country that is served by Glaser's Rural Motor Express. They are 12 ft. high and 50 ft. long. They are building business for him

WAR TAX 5¢ ON THIS SHIPMENT		ORIGINAL	
EXPRESS RECEIPT (NOT NEGOTIABLE)			
GLASER MOTOR EXPRESS CO.		No 1100	
G. E. GLASER, OWNER			
(Town)		(Location)	
Received from		191	
SUBJECT TO CONDITIONS PRINTED BELOW.			
The following:			
declared by shipper to be		Value herein	
(SEE CONDITIONS BELOW)		DOLLARS	
Consigned to		Shipper's No.	
Class of rate		Weight	
		Charges	
GLASER MOTOR EXPRESS CO.			
(Shipper's Name)		(For the Company)	
<p><b>CONDITIONS:</b> This shipment is received with the understanding that value does not exceed \$500.00 (Five Hundred Dollars). In case of loss or damage to this shipment, Glaser Motor Express Company does not be held responsible for an amount in excess of \$500.00 (Five Hundred Dollars), unless specified on the face of this receipt, and a charge of \$6.10 (Five Cents) per hundred dollars, or fraction thereof, is paid to insure this shipment for an amount in excess of \$500.00 (Five Hundred Dollars).</p> <p>Glaser Motor Express Company accepts this shipment with the understanding that it will be delivered to consignee in good order, unless unable to do so by causes beyond its control, such as Acts of God, lightning, war or orders issued by the United States Government.</p> <p>Shippers guarantee that in case this shipment can not be delivered to consignee within 30 (thirty) days that he will pay all charges and have shipment returned to him. In case shipment can not be delivered in 30 (thirty) days and the shipper does not take action, same will be sold at public auction by Glaser Motor Express Company.</p>			

The business operated along real business lines. This is the receipt given for express. It is in triplicate

**T**WO of the Strongman tractor dealers in Reilly's distributing organization had come to Callawassa to fix up schedules and a few other details. They had already sold several tractors in the country that centered around Callawassa, and Reilly had quite thoroughly sold them on the possibilities that lay in an automotive career.

If they kept up with their enthusiasm they should make money—so Reilly thought.

Benham was an ex-mechanic, who was being educated along merchandising lines, and Davitt was an ex-salesman, who had set up for himself. Both were doing well.

"But what I want to know," said Davitt, after the preliminaries were out of the way, "is how best to get a flock of these tractors into my territory without going to more expense than is necessary."

"Demonstrate Them!"

"Demonstrate 'em!" replied Benham.

"How do you do it?"

"Just go out and demonstrate 'em," Benham asserted. "I take them out and tear the top off the country and just show the farmers that the darned thing will make rings around any flock of horses that ever walked on his farm."

"Do you demonstrate for every sale?" Reilly asked.

"Sure! Why not? Got to sell 'em, haven't we?"

"Certainly, you've got to sell them," agreed Reilly, "but I think I'd be a little wise about doing too much demonstrating if I were you."

"Why? What's the idea?"

"You'll eat up all your profits if you don't watch out," explained the distributor. "I suppose you know that demonstrating costs you money, don't you?"

"Well—"

"How much does it cost you to make a demonstration?" asked Reilly.

"Well—I can't say offhand," parried Benham, "but—but, I charge four dollars an hour for plowing sometimes—"

"How many times have you charged for plowing?" Reilly inquired.

"Oh—several times," but Benham didn't become very specific in his figures.

"I'll bet the times have been few—and rather far between," was Reilly's comment, and the amount of silence that Benham produced indicated that he hadn't much to say in controverting the statement.

"One thing we tractor and truck men must get into our heads," declared Reilly with emphasis, "is that the old abuses that grew up in the motor car business must not be let to start in these new lines. We can make a lot of money for ourselves by getting off on the right foot."

"Some of the tractor dealers are doing too much demonstrating, and they're eating up their profits. It costs a lot of money to haul a tractor out to a man's farm. If you drive it on a truck or over the roads it is an expensive operation, and after you're all through you haven't demonstrated anything that couldn't have been just as well demonstrated without so much expense."

"But how?" demanded Benham.

"Well," Reilly explained, "if you are just starting in with a tractor you probably will have to make a few expensive demonstrations, but after you get started you should be able to cut down on these by quite a lot."

"For instance, you sold your first tractor on the Millman farm six miles south of your town where the land is all alike for miles and miles. You probably had

## Keep the Old Trade Evils Out of the New Automotive Business

By Ray W. Sherman

to demonstrate to Millman to sell the machine, but after he got it he has found it of great use to him. It has plowed on nearly all his land, has worked in all sizes of field, has found for itself a great many belt and hauling uses, and has turned itself into a regular farm power plant. Millman likes it and is ready to admit that the machine will do all you claimed for it.

"Now—when you get a tractor prospect who says: 'Yes, it looks like a good machine, but you see my land is different. I'd like to know what it will do on my land,' you simply say: 'Do you know the Millman farm? Well, his farm is pretty much like yours. Let's go out and see Millman's tractor work.' And then you take him out and let Millman's tractor serve as the demonstrator with Millman to furnish word-of-mouth testimonials."

"Don't you see how that will save you a lot of time and money? If you locate several tractors around your territory on different kinds of farms you have a working example that can be used in the place of demonstrations."

"Many of the farmers who ask for

demonstrations are simply trying to work you. The only way I make a demonstration is to take a deposit from the farmer with the understanding that he keeps the tractor if it does the work, and that if he doesn't he has to pay a good stiff price for the work done."

"The same thing applies to trucks. I wouldn't haul lumber a week for any man. The Sayanna truck will stand up and do the work, and there is no question about it. I can tell by looking at a man's business whether a Sayanna is what he wants, and I put the name of Reilly back of the sale. If that isn't good enough for him he can go and whistle so far as getting a lot of his work done for nothing is concerned."

"And then there is trading. I don't trade at all, unless I know where I can place the tractor and make money on the deal. The same thing applies to trucks. I went through all that stuff in the passenger car business and I'm darned if I'm going to foster anything that stands to make me lose as much money as I lost in fussing around with used cars."

### Sells for Cash

"And I sell for cash. If I take notes they are only such notes as I can take to the bank and get the money on. I'm not going to finance the operations of all the business men and farmers in this part of the world. The time has come when a few of them have got to stand on their own feet. I'm no banker."

"There's service, too. When I sell a tractor it stays sold and that's the end of it. If a part breaks that is covered by the guarantee I replace it, but for all repairs the farmer pays. We teach him to run the machine and then put it up to him. If he can't run it himself he ought to have a man who can. But no matter what his status is we are not going to sell a tractor and throw in a mess of service with it. That's another old passenger car trick that is in the discard so far as I'm concerned. I—"

"Well," asserted Benham, "I didn't say it before, but I guess I was making a bum start. I can see a few more profits now than I could before."

### Marmon Dealer Makes Light Plant

CHICAGO, Sept. 23.—To supply complete automotive equipment to dealers for farm power, the Marmon-Chicago Co., Marmon and Hupmobile distributors, will market on a national scale a new product of its own, the Universal farm light and power plant, designed to supply complete electric light and power for the modern farm.

Charles E. Gambill, for seventeen years with the Marmon Co., and president of the Marmon-Chicago Co., states that the Universal plant will be distributed entirely through motor car trade channels. The system is one which can not only be utilized for electric lighting but also is designed for use with other small power farm machinery, such as cream separators, milking machines, feed grinders, etc. In addition to the gasoline-electric outfit, the company will distribute nationally equipment designed for the Universal plants.

# Why Some Garages Refused to Close at Night

## A LESSON IN THE GENTLE ART OF PERSUASION

*By Clyde Jennings*

ST. LOUIS, Sept. 19.—When Robert E. Lee, automobile commissioner for this district under the State Council of National Defense, persuaded the police department to lend him moral aid in the movement to close garages at night and on Sundays, he solved the mystery of why some garagemen refuse to close.

Lee had no idea that this was to be the result of his getting this official aid in an unofficial venture. Neither did the police realize the possibilities. The police went into the matter because Lee is friendly with the powers that be and because it appealed to them as a worthy patriotic movement. So the patrolmen were asked to make a report of each garage and oil station open after hours.

But when these reports began to filter through the police department the discovery came. Some of the garages that were remaining open were UNDER POLICE SUSPICION AS FENCES.

In most cases the police have been unable to get these places "with the goods," but the automobile squad members are very strong in their suspicions. One look at the list of the garages reported—especially the second offenders—and the police are ready to go their length in seeking to close them. The policemen have no hesitancy in asserting that if the powers at Washington will give to Commissioner Lee or someone else authority to close these places by punitive methods motor car stealing in this community, and more especially the thefts of accessories, will suffer a slump unequaled in any given length of time.

When the second series of "open" reports began to filter into police headquarters a policeman was tolled off to accompany Lee to visit those who remained open. Lee would drive up to a garage and the policeman would enter to demand an explanation as to why the garage was remaining open in defiance of orders. Always the garageman came out with the policeman to have a personal word with Lee.

The conversation was always the same:

Garageman: Captain Lee, I am as patriotic as anybody, but I cannot afford to close while that pro-German

blank, blank across the street stays open.

Lee: Now never mind the man across the street. I'll attend to him. Only your shop is under consideration now. Are you going to close?

Garageman: Sure, but these damned pro-Germans keep open and will steal my trade.

Lee: This policeman and I will at-

The policemen realize the full meaning of the game and have entered into it heartily. They not only ask the name of the owner who is in charge, others present, but reasons why the place is open.

Here is another chapter of the closing effort. When the garagemen read it they will learn why their association did not accomplish what some of them thought it would. The meeting was called in a garage and a local attorney who, for some mysterious reason, is supposed to have a pull in federal affairs, presided. He assured the garagemen that there was no law to close them up and that they had a perfect right to demand the law and a good many other things that attorneys on trail of fees say.

He was careful to avoid reference to patriotism, and he was as careful to avoid promising any direct results as are the commissioner and the policeman

in threatening direct results. The attorney would take the matter up with Sigmund Baer, the member of the State Council under whom Lee operates, and there were strong inferences as to what would happen to Lee. There were some remarks that did not sound well about the war service regulations.

The next morning Lee called up the attorney, who was a close acquaintance, and offered to accompany him to visit Baer. The attorney was taken off his guard and blundered back a question as to how Lee knew.

"I was there," answered Lee, and to prove it he began to quote long sentences used by the attorney and speeches made by several members. Also the request made for "\$5 for postage" from each man present.

This will explain to the garagemen why their attorney lost interest in their affairs apparently. He has not been as enthusiastic since that meeting, although he did call on Baer without taking Lee with him. But he did not tell Baer all of his remarks about Council of Defense affairs, and it is not likely that he will push Lee into making them public. But it is not a part of this story to tell the attorney how Lee got into that meeting, if he did, or got so accurate a report of it if he did not.

### *Are You Conserving?*

After the National Automobile Dealers' Association formulated its War Service Conservation regulations it found some tradesmen who, when it came to co-operating with the rest of the trade, "simply weren't having any." In some towns forceful measures effected results. Did you co-operate?

tend to the pro-Germans, but you are to attend to yourself before you get into a position that we can't help you. How much did you sell last night after 7 p. m.?

Garageman: I don't know exactly. I did not have very good trade last night.

Lee: I know. You took in less than \$5 and your profit was not enough to pay for your lights. Now if you average more than that you send me a report of your cash sales. You are losing money and you know it. Why not close?

Garageman: It is not the amount I take in but my trade will be led off.

Lee: Now you get right or you will not have any trade to be led off. You don't get any but pro-German trade anyway, and as a patriot you should be ashamed of it. Now it's up to you.

This talk was repeated at each place. But as Lee and the policeman left the lights went out. The next evening calls came to Lee's home like this:

Garageman: Mr. Lee, I came down here to-night to work on my books and along comes a policeman and makes me turn out the lights. Can't you fix it so that I can work on my books at night.

Lee: You might have an office partitioned off and have no lights except in this space, but a better plan will be to take the books home.

# Truck Owners Must Be Sold on MOTOR FREIGHT POSSIBILITIES

## OR ELSE NEW BLOOD MUST BE INJECTED INTO TRUCKING FIELD

**A** KEEN analysis of the return load proposition in and around St. Louis is made by W. E. Rehbein, manager of the Garford branch there, in response to an inquiry from Motor World. For the present, he said, the proposition is one of education of the present motor truck owners, who have not yet learned the art of selling transportation, nor of looking to the future.

The movement, now, he said, is under the general direction of Traffic Manager Coyle of the Chamber of Commerce, who has too many other things on his mind. What is needed is concentrated management, frequent meetings and a new organization to replace the Truck and Team Owners' Association, where the truck and team factions are pulling against each other. This is how he said it:

### Mr. Rehbein's Views

"I came to this branch in April from Columbus, Ohio, where the return load proposition was highly developed. Ohio is a network of railroads and interurban lines, yet local freight congestion there was intense. The truck owners had the advantage of good roads and they had realized by the volume of interurban express business that the railroads were not handling the transportation as they should. They had already seen that the more transportation that is available, the more is demanded.

"In St. Louis I took up this matter from my own standpoint at once. I made some inquiries and made a map of St. Louis and vicinity to a radius of 50 miles, with all truck roads outlined and marked as whole-year roads and fair-weather roads. I also figured straight and change-line traffic charges in this territory. About the time I had completed this work I was invited by Traffic Manager Coyle of the Chamber of Commerce to join in the work he was organizing.

"We have had a number of meetings and we have done something toward stabilizing time tables and rates to the nearby Illinois towns, such as Alton, Belleville, Edwardsville, O'Fallon, etc. One truck line to Alton, Ill., is moving 40 carloads of essential freight a month and trucks are well filled each way.

"The chief troubles we have found are these:

"The trucking firms want the pro-

motors to guarantee them a profit from the jump-off.

"One firm that is handling much freight from Belleville, Ill., 16 miles, is getting only 12½ cents per hundred weight, while the price should be at least 25 cents. The idea was that of competing with the railroads, instead of selling service with transportation. This firm lacks the nerve to increase the prices.

"A truck firm with 20 units in service in St. Louis has declined to enter the

suburban field because it stands pat on the assertion that it cannot compete with the railroads.

"We have not been able to induce the commercial clubs of the various towns to take the matter seriously enough to establish a bureau where transportation demands can be listed.

"With few exceptions, the truck owners fail to see that their transportation can be made more valuable than the railroad because they will give service and a guarantee against unreasonable delay when freight is accepted.

"Finally, the need of better roads.

"We had hoped to get this thing going before winter, but we have not succeeded. Now we are laying plans to keep the lines we organized, and that are running, going through the winter and to line them up to uniform prices at which they can make money. If these lines weather through the winter we hope for great things next summer by constantly hammering away on the objections raised.

### Troy Company Realizes Possibilities of Truck

"Our best card is a produce company at Troy, Mo., that has bought two large trucks to bring its produce to St. Louis and haul back merchandise on its route. Troy is almost 50 miles distant, a much longer distance by road. We hope to aid this firm with a view of showing what can be done. The backers of this company appear to have good ideas and determination and we hope to make an example of them.

"A good many farmers living some miles from St. Louis have organized such lines and some of them are doing well. They haul all sorts of things.

"Most of the former city horse-express managers cannot imagine the amount of freight in the country. We can show them the merchandise waiting at the wholesale houses here to go out, but we cannot visualize for them the wheat, milk, fodder, etc., to come back. They do not appear to grasp the idea that this is motor truck freight. The fact that it is so hauled elsewhere does not get to them.

"This applies especially to the Missouri side of the suburban territory. In Illinois it is much easier, because on that side there are great factories making munitions, war supply boxes, and there are coal mines. This freight is visible and the truck owner, once he gets out of the congested district, sees it and goes to it."



W. E. REHBEIN

Manager of the Garford Branch, St. Louis, is active in the promotion of the return load effort there and also is on the Truck Show Committee, planning an exhibit this fall



# In Tractor Merchandising Chain

## There Is a Missing Link

### The Motor Car Dealer Is Giving the Implement Man a Run for His Money to Step Into the Gap

**T**HERE is an aching void—a missing link—in the merchandising and service phases of the tractor industry of America. It must be filled, or supplied, at once, if the industry is to take advantage of the unexampled opportunities before it at this moment and make the progress which every known condition and influence virtually demands of it.

That missing link is the dealer.

Who is going to fill the void? It is going to be either the motor car merchant or the farm implement dealer, or both. If it is going to be both, it will be hand-picked, selected stock; no "culls" or "seconds" will have a chance.

This, in brief, represents probably the predominating thought of the splendid meeting held by the Wisconsin Power Farming Association at the Republican House, Milwaukee; Friday evening, Sept. 13, at the fag-end of state fair week in Wisconsin. Twelve of the leading tractor manufacturers of the Central States were represented, either by their sales managers or the branch managers located in this state. It was the fourth session of the association, but so far as actual achievement and inspiration go, it will be historic as the first. The great tractor show at the state fair, which was one of its principal features this year, furnished a volume of experience that kept the meeting in a constant state of intensified thought and awakened expression of inestimable value.

From all of which it appears that the main problem of the industry to-day is the dealer. The manufacturer is doing his share in furnishing production; the wholesaler is ready to do business as it should be done; the farmer is already sold. Indeed, the farmer is so well sold that he is far and away ahead of the industry itself. The go-between alone is lacking. The retail dealer is "not there."

Picture a condition by which one distributor during the last five or six months alone has sold 90 per cent of his goods for the dealer instead of through the dealer! Imagine one exhibitor at the state fair confronted with nine anxious, open-pursed tractor prospects and not a single dealer on hand nor in sight.

Only two actual, graphic illustrations of the "missing link," but they speak volumes.

Are the motor car dealers of the United States going to pass up this golden opportunity? Are the tractor manufacturers and the distributors and the buyers themselves going to be obliged to seek someone to whom they want to hand profits—big money?

With due respect for the implement trade of America, it admittedly is not in shape to fill the aching void. Even

tor industry has known in its rather brief history. The stage is all set for him. His role actually is going begging!

The day of wild-cattling in the tractor industry is not yet over. It is a bit too young to expect that. But this situation is one of many which has great need for just that stabilizing influence which the motor car dealer can bring to it. He has made his reputation, or he wouldn't have been in business this long. He has created confidence. His word is as good as his bond. He has too much at stake to go out and sell something he hasn't got to someone who doesn't want to buy it.

It is not necessary to point to the admirable service organizations which have been built up in the motor car trade as a prime advantage to the motor car dealer in entering the tractor field. Still, this is a sore spot that usually is touched whenever a tractor distributor talks about an implement man as a tractor dealer. This is a

point that evoked so much interest at the Wisconsin tractor meeting that it had to be side-tracked and was made the main order of business at the next meeting, so that an entire evening could be devoted to this subject alone.

A side-light on tractor problems which came in for healthy discussion was the question of financing tractor sales. The main thought given expression is that the bankers of the farming communities of America have got to be sold on the tractor. Right to-day the farmer actually is financing his tractor purchase practically alone and unaided by the dealer. The banker is taking the farmer's paper with alacrity, especially since he may rediscount it through the Federal Reserve Bank system.

The dealer actually has to fight for recognition, although he offers as a basis of credit an implement or a machine that is feeding the world. It means, then, that the tractor dealer, with the assistance of his manufacturer and distributor, has got to "sell" the banker. The interest of maker and distributor is obvious, of course. But if the dealer is able to finance his proposition properly all ends will be served, and a volume will be possible.

### *There Is Opportunity*

for the motor car dealer in establishing himself in his community as a tractor headquarters. In years to come the dealers in agricultural sections who are not handling tractors will be in the minority. Two or three legs under a business are obviously better than one.

the most hide-bound adherents of the implement man in the development of the tractor industry acknowledges that one of the great problems of the day is to educate him—to bring him UP TO a certain point. And what is this certain point? It is the level which the motor car trade has reached in both merchandising and service; in knowing how to sell the goods and then keep the customer satisfied, and to do both honestly, legitimately and conscientiously.

### *Implement Man Is Liked*

There is no secret about it that the average tractor manufacturer and distributor has a warm spot in his heart for his old-time friend, the implement dealer. At the same time it is no secret that the invasion of the tractor field by the motor car dealers is viewed with just a little sense of alarm—probably just because the motor car dealer is so beautifully equipped in every way through his motor car experience that he doesn't need to be educated up to anything. His already is the very pinnacle the implement dealer is to be taught to attain.

But that shouldn't scare off the motor car dealer. Without question, he is to-day the ripest proposition that the trac-

An instance was related at the meeting by a distributor who this season marketed 101 tractors, which illustrates the financial problem to a nicety. This distributor, by the way, is the same man who sold 90 of these tractors for the dealer, instead of through the dealer. That is another story. What he had to do is to not only sell ninety for the dealer but get the farmer to finance his purchase in sixty instances. If the American farmer's credit were not so good as it is to-day, such things would be wholly impossible.

What, then, is the dealer to do? He has got to "sell" the banker so well that when he brings paper to the banker he

will get the same obliging consideration that the farmer now gets. The farmer isn't getting this consideration because he is buying a tractor but because he is a farmer. The banker as yet is quite gun-shy of the tractor. It's too new a thing for him to bank on to any great extent.

So, the Wisconsin association members believe, it is up to them to sell the banker by a more intimate contact with the tractor and what it is for. The dealer will have to pitch in and help, for it is for his own good, and he is in the best position to do it. Every time there is a demonstration in a community, the distributors urge the dealer should extend

a personal invitation to the local banker to come out and see it. A few trips of this kind, to see the tractor at its hardest work, and prove itself something very tangibly efficient and an urgent need, are bound to awaken the banker to his real responsibility, they figure.

Next time the Wisconsin association gets together, within two or three weeks, "Service" will be the topic of the day. And, like "Merchandising," this topic undoubtedly will unloose a torrent of splendid, valuable thought.

But here, too, the manufacturers and distributors will find an aching void—a missing link—which the motor car dealer can best fill—can best supply.

## *Lo, the Rich Garageman, Supplants the Poor Indian*

*Two views of the Santa  
Fé Motor Co.'s building  
in Santa Fé, New Mexico*



"Lo, the Poor Indian," as the poet said, had an untutored mind and saw things in the wind, but when L. H. Bennett looked out what he saw was a flock of tourists heading straight for the Santa Fé Motor Co. And inasmuch as Poor Lo had departed for parts unknown, Bennett proceeded to play the part of both Indian and garageman.

Bennett, who is located on the Santa Fé Trail, in Santa Fé, New Mexico, made his garage look "Santa Fé Trailey" by fixing it up as he thought Poor Lo would do the job were he present, and then, in addition to the conventional stock of accessories, he put in a lot of Poor Lo's accessories, such as blankets, pots, mugs and all those other Indian curios that tourists like to carry home and set up on the mantel so they can say, "Now, when we were in Santa Fé—"

The garage, despite its curio aspect, is thoroughly modern, with rest rooms and all conveniences, and is a pleasant place for tourists to stop at. It is a worth-while stop—for the tourists and for Bennett.

*The editor of this department is glad to answer questions. In sending queries, always include copies of contracts, notes, etc., to which you refer.*

# THE LAW

By George F. Kaiser

*As It Applies to*  
Dealers  
Repairmen  
Garagemen

## Havana's Way

Editor Motor World: As a subscriber to your magazine, I think you will not refuse my request for information if this lays within your knowledge.

We have in Havana an association of automobile dealers and garage owners, and are trying to obtain for each factory representative of automobiles a dealer's license, which will allow him to try out any automobile belonging to the agency.

At present we have to apply for a special license which is valid for 29 days, and is only applicable to the car for which it is taken out.

On this license we have to pay a tax of \$3, therefore this means \$3 for every car we have on sale, which, supposing there are 10 only, would mean \$30 per month.

Sometimes it happens that it is impossible to obtain these special licenses, in which case we are forced either not to take the car out or to run the risk of it being stopped by a policeman and run in for being without a license.

It would be impossible for us to take out a full license for each car, because in the case of a Paige Model Essex this amounts to \$61.25, including license, tax of \$3 and number plates at \$1.

Should this car be sold outside of Havana we should lose this amount on each car because each province or city has its local rates just the same as in the United States.

Another disadvantage of the present system is that if you want to take out a license for 2 months, it costs you just the same as if you had taken out the license for a year, there being no system of rebate for half-year or quarter-year subscription.

I understand that in the United States you have a special system for dealers, allowing them a dealer's license which can be used on any automobile belonging to the said dealer, and I should very much appreciate your information on this matter, giving me the full details as to how and under what conditions it is applied, and what number of licenses is allowed to each dealer and cost of same.

If this system can be applied in Havana I shall be glad to place it before the mayor and will not fail to advise him the source of the information, this being probably of some use to you at some future time.

I represent the Paige, Scripps-Booth and Oakland automobiles for the Island of Cuba, and you can be assured of my

full appreciation for any trouble you may take on my behalf.—C. W. MILES, Havana, Cuba.

**Answer**—In New York a dealer's license, including one pair of number plates, is issued upon payment of a fee of \$15. Duplicate sets of number plates are issued upon further payment of \$5 for each set.

A number of other states have similar provisions in their Motor Vehicle Laws as regards dealer registrations. I suggest that you write to the Secretary of State at Albany, N. Y.; the Commissioner of Motor Vehicles at Hartford, Conn.; the Massachusetts Highway Commission, Automobile Department, Boston, Mass., and the Commissioner of Motor Vehicles, Trenton, N. J., and ask for a copy of the Motor Vehicle Laws of their respective states.

By comparing these various state laws you should be able to get some idea for the law you propose to draft. These laws are too long to set out at length here, but I do not think you will have any difficulty in getting the pamphlets from the various states.

## More Lien Trouble

In a recent case in one of the New York courts it was decided that in order for a garageman to establish his right to a lien for repairs he must prove that he had either an express or implied agreement with the owner.

It appeared that the owner of a Ford car which was stored with the garage keeper refused to pay for certain repairs which had been ordered by his chauffeur. The garageman refused to give up the car and the owner brought suit to replevin it. The garageman's bill for repairs amounted to \$118.35. The owner offered \$50 in settlement of the bill. The court allowed a lien for \$96.35, disallowing a charge for a new starter which had been provided by the garageman on the theory that that was not a proper item to furnish when authority was only given to repair the car.

## Selling Used Cars

That a person buying a motor car who leaves the car with the seller to be resold at a price named makes the seller his agent, is the decision in a recent Mississippi case.

The buyer bought the car from a dealer for \$698, paying \$250 in cash and giving monthly promissory notes for the balance. The seller reserved title to the

car and the contract was assigned to a securities company.

The buyer thereafter left the car with the seller with the understanding that it was to be sold for \$400, but the latter sold it for \$253.

Upon suit by the buyer, the court granted judgment in his favor for redelivery of the car or \$400 in cash, holding that the dealer was his agent for the purpose of selling the car and it could not therefore sell it at any price it might see fit merely because it had reserved title to it when it was sold to him.

## Did You Know This?

It is not generally known that a section has been added to the Penal Law in New York State which provides that it is a misdemeanor to leave motor vehicles unattended on any ferry boat plying between this and another state and from or to a state of 500,000 or more inhabitants.

Another law which applies to motor vehicles which is not generally known because it is part of the Penal Law and not a part of the Motor Vehicle Law of New York is that it is a misdemeanor to knowingly buy, sell, receive, dispose of, conceal or knowingly have in one's possession any motor vehicle with a manufacturer's number or any other identification mark removed, defaced, covered, altered or destroyed for the purpose of selling or misrepresenting the identity of the car.

## Philadelphia to Close at 8 P. M. Daily

PHILADELPHIA, Sept. 21—The Philadelphia Garage Association will close all gasoline tanks and service departments of members at 8 p. m., daily, beginning next Monday. The purpose is to conserve fuel, electric light and man power. Announcement of this decision is made by George G. Blind, president of the association, who has informed the State fuel administrator of the plan in a letter. Only such lights as are essential to the safety of owners of cars returning their machines will be left burning in the garages. The movement was decided on at a meeting of the association attended by 150 members.

## Washington Office for Duesenberg

WASHINGTON, Sept. 21—The Duesenberg Motors Corp. has established a Washington office in the Munsey Bldg. It is in charge of general sales manager N. G. Rost.

*A Department of*

# BETTER MECHANICS

No. 83

## Mounting House Wire Wheels on Ford Car

**T**HE first step on mounting wire wheels on a Ford car is to remove the wood wheels from the axle spindles. In the case of the front wheels, the balls and retainers from the front hub are changed over to the mountings of the wire wheel hubs and replaced in the manner shown in Fig. 1. It is necessary to pack these bearings with grease, and the final adjustment should not be made until one of the wheels has been slipped in place. This adjustment should be such that the wheel turns freely, with a slight amount of play.

In the case of the rear wheels, the brake drums are removed from the wheels and bolted to the flanges of the rear wheel mountings, using the drive pin bolts and nuts provided for this purpose. Both the front and rear wheel hubs are marked for the side of the car on which they are intended to go.

### Watch This!

Most of the accidents in the case of wire wheels are caused by not mounting the hubs upon the proper axle. *The hubs with the right-hand thread go on the left side of the car and those with the left-hand thread go on the right side of the car.* The right-hand side of the car is at the driver's right when he is seated in the car. On this mounting depends the self-tightening of the hub caps. Otherwise loosening, throwing a wheel and a dangerous accident may result.

The positions of the automobile hub lock are shown in Figs. 2 and 3. When the wheel has been finally installed, the cam lever should be turned in the position shown in Fig. 2, permitting the lock to drop in place onto the hub teeth. To remove the hub, the cam is turned a quarter turn, releasing the lock. This position is shown in Fig. 3.

It sometimes happens that wire-wheel spokes will break in service, either because of being cramped against curbs, because of being too tight, or because of imperfect material. In this case new spokes should be put in at once. In doing this, the following precautions are necessary:

1—Free the contact surfaces of the spoke ends from all paint and provide

them with a little graphite lubricant.

2—Enter the spoke from the hub and the nipple from the rim.

3—Tighten the spoke until the sound produced by tapping the spoke gives the

same pitch as that resulting from tapping the other spokes. This will assure the application of uniform tension. A high or low pitch may be obtained, but the best is a medium pitch.

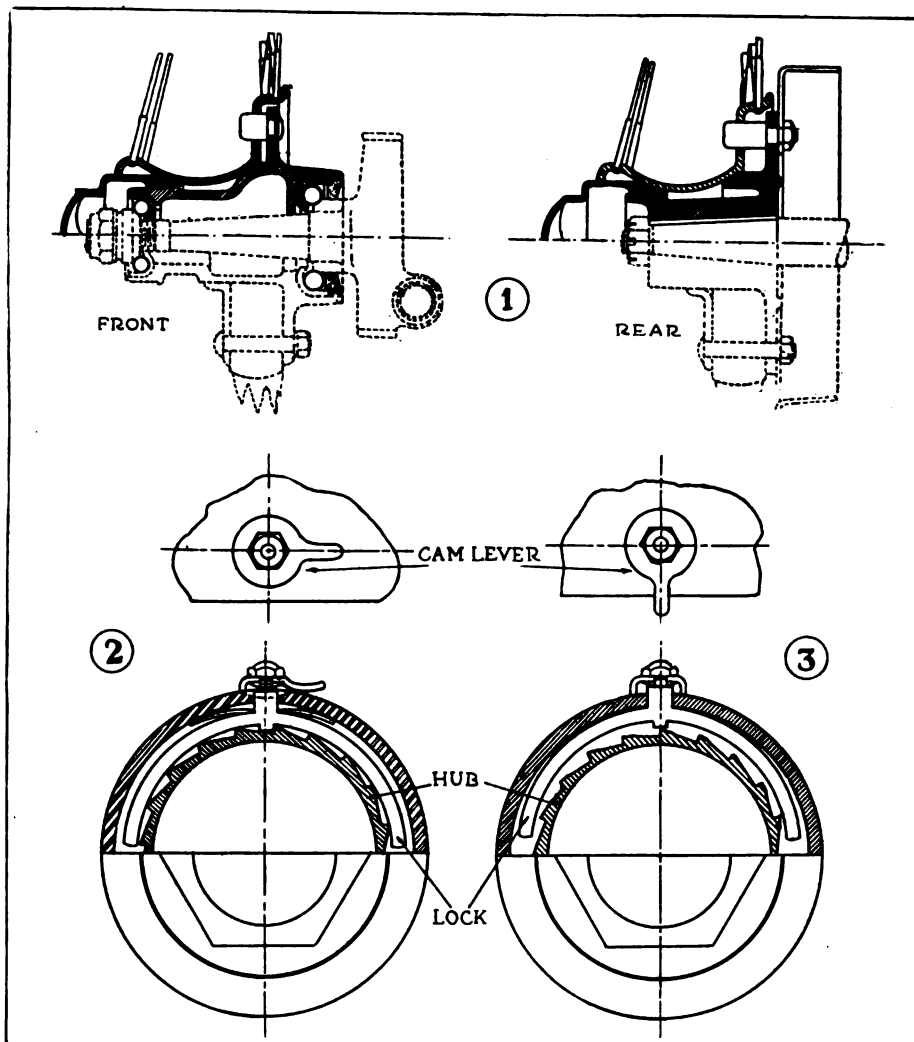


Fig. 1—The wire wheel installation is shown in heavy lines, and that of the former wood wheels in dotted lines. Fig. 2—Shows the automatic hub locked in the engaged position. Note the position of the cam lever, which is in the driving position. Fig. 3—By turning the cam lever a quarter turn from the position shown in Fig. 2, the lock is released. This is the position when removing or replacing a wheel



# This Kind of Literature Is Valuable to the Dealer

THE KELLOGG MFG. CO., Rochester, N. Y., issues a special booklet for each principal make of car, describing its engine driven tire pump and its installation. When a Chevrolet owner is being written to by the dealer one of these booklets may be inclosed. It is effective because it applies specifically to his car, and it is easily mailed by the dealer because it FITS THE ENVELOPE. Many booklets shipped to dealers by

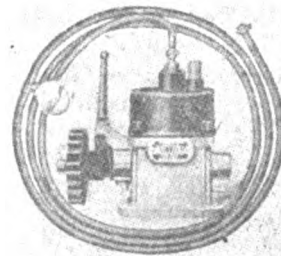
## KELLOGG ENGINE DRIVEN TIRE PUMP

### EQUIPMENT

"A TOURING NECESSITY"  
"AN EVERY DAY CONVENIENCE"

Furnished Complete with Air Hose, Tire Gauge and Installation Fittings, with full Instructions for Installing

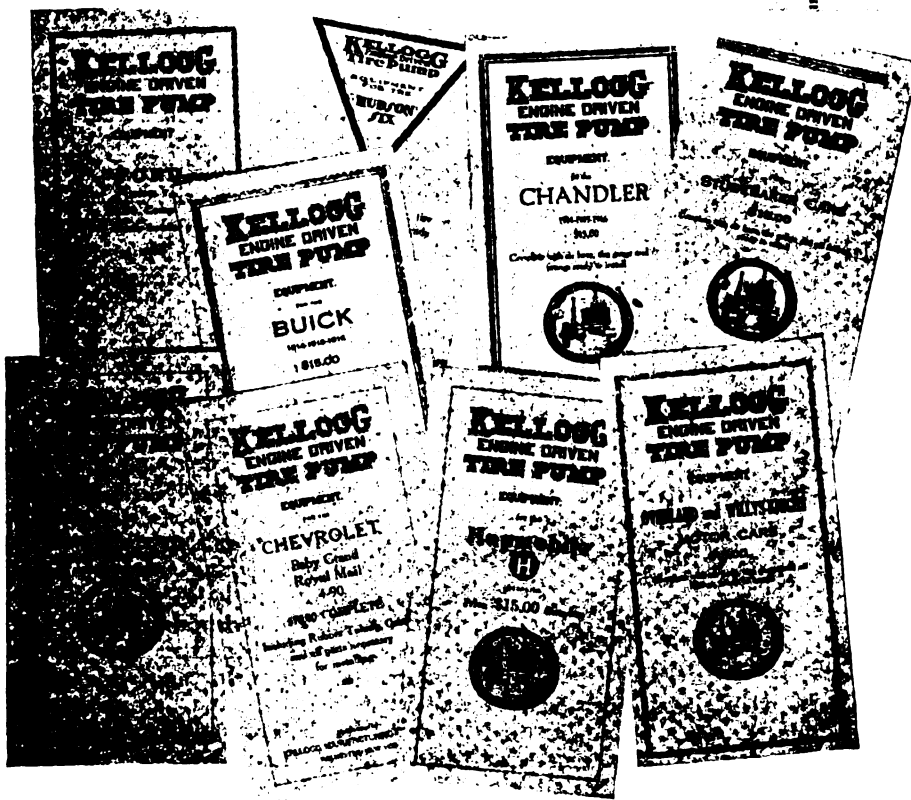
**\$15.00**



MODEL 101

Union and Advertiser Co., Rochester, N. Y.

manufacturers WON'T FIT the envelopes and are useless from the dealer's standpoint. The booklet above is shown about full size. The smaller ones illustrate the different special covers



# Repairshop Shortcuts

*From Motor World Mechanics*

## No. 1537—HANDY PICK-UP

A device for picking up things around a battery bench is made from slips of hardwood 2 ft. long fastened to a block with brass screws at one end and pointed at the other. It is useful for handling parts of the battery when it is on charge and also for picking things out of acid.—G. E. C. Wager's Repairshop, Fresno, Cal.

## No. 1538—CONVERTING A VISE INTO AN ARBOR PRESS

A vise is converted into an arbor press for small work by drilling a hole through the movable jaw, the hole being large enough to admit a piston pin. This device will push rocker-arm brackets in place or piston pins into connecting rods.—Fred Stiff, New Glarus Auto Co., New Glarus, Wis.

## No. 1539—SPECIAL WRENCH FOR FORD CONNECTING-ROD TOP BOLT

A special wrench for the Ford connecting-rod clamp bolt is made by heating and bending a 9/16 x 3/4-in. open-end wrench so that the head of the wrench will fit the bolt flat while the outer end is clear of the piston.—B. C. Adams, Adams Garage, Knot, N. Y.

## No. 1540—UNIVERSAL COVER-RETAINING BOLTS FOR REO

New retaining bolts for the Reo universal cover are more quickly made by sawing a slot in the heads of standard bolts than by drilling holes for the retaining wire. After the wire is placed in the slot the ball pein of a hammer will close the sides down to hold the wire in place.—W. S., Marine, Ill.

## No. 1541—BEARING-BURNING BLOCK FOR FORD ENGINES

A bearing-burning block for Ford engines is constructed from one-half of a Ford crankcase cut vertically between the second and third cylinders, a piece of shafting, a coupling and a Ford front wheel. This outfit is mounted on an oak stand. The belt

## Make a Dollar

*HOW often have you been compelled to rack your brain to overcome some difficulty? But when you did find a solution—what satisfaction it was! Well, here's a chance for you to dig some of those life-savers out of their hiding places and put them to work for your fellow-craftsmen. Send them to Motor World. We will pay you a dollar for every one accepted for publication.*

*The only requirements are these:*

*1—Describe the shortcut briefly but clearly, in few words.*

*2—Send a sketch, in pencil or pen, no matter how rough; our artists will finish the job.*

*3—Write on ONE side of the paper only.*

*4—Sign your name and initials, the name of the company you are with, and the town.*

*Write plainly. If your name is unusual, print it in capital letters.*

drives the wheel, which is keyed to the shaft which runs in the two bearings of the half crankcase. The coupling on the other end drives the engine shaft, which is bolted to the table with long bolts.—P. W. Pittman, Pittman Motor Co., Durango, Col.

## No. 1542—AUXILIARY VISE JAWS FOR THREADED WORK

Auxiliary vise jaws for holding threaded pieces, such as bolts and studs, are made from two pieces of steel drilled and threaded to fit the

screws. The steel pieces are 3/4 in. square and 5 in. long, with 1/8-in. holes drilled 1/4 in. from the ends, through which pieces of 1/8-in. drill rod pass to keep the blocks in line, the ends of the drill rod resting on the vise jaws when the device is in use. One block should fit tightly on the pins and the other should slide. Holes are drilled and tapped through the blocks when they are clamped together, the holes centering on the crack between the blocks. The tapped sizes of the holes are 1/4, 5/16, 3/8, 7/16, and 1/2 in.—A. L. Bennett, Buffalo, N. Y.

## No. 1543—TUBE-WINDING DEVICE

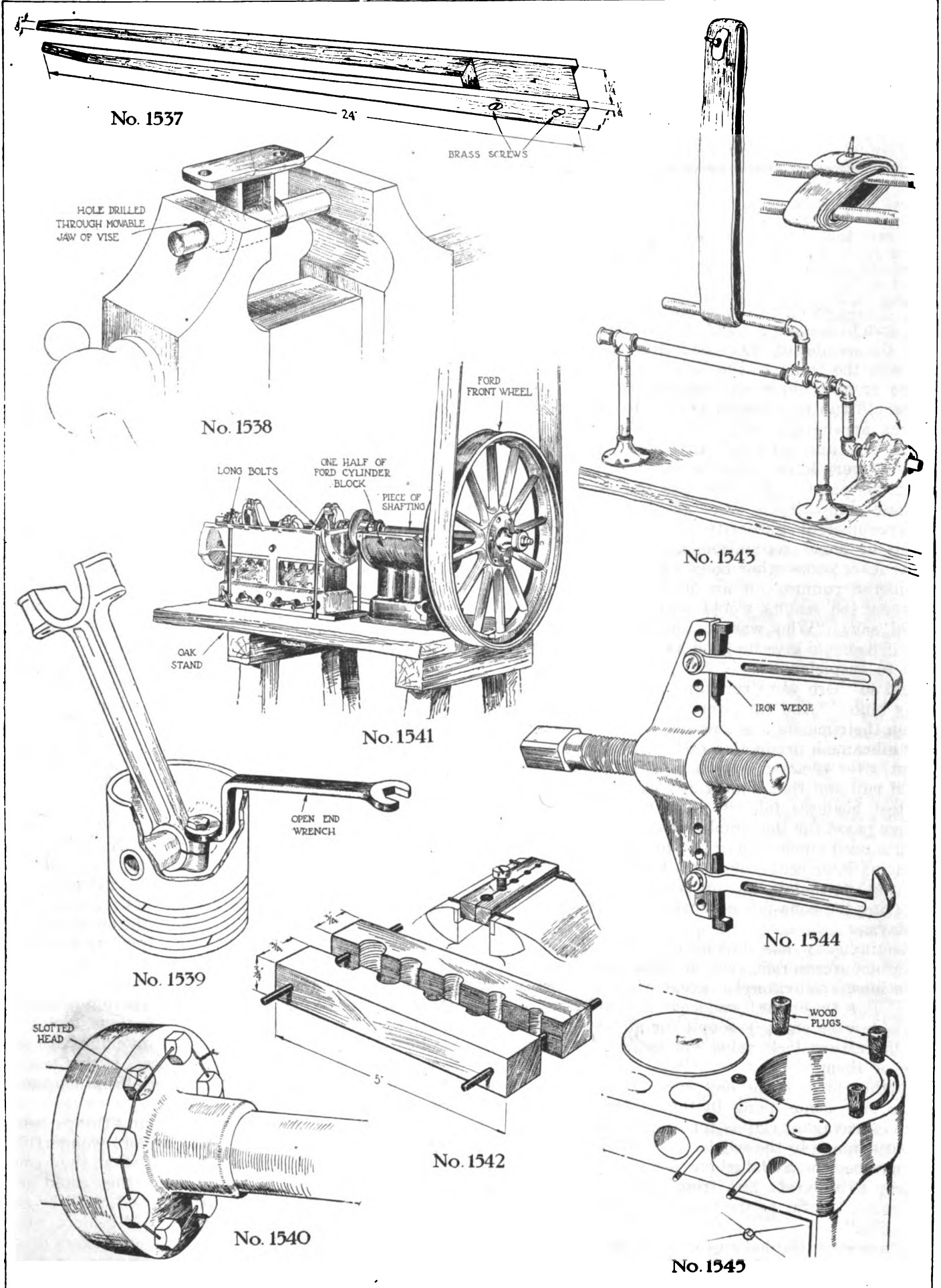
A device for winding the air from tubes after they have been tested is made entirely of pieces of 3/8-in. iron pipe and fittings. The revolving piece consists of five pieces of pipe, three elbows and a tee. The supports are nipples, with a floor socket on the lower end and tees on the upper end, the tees being drilled out large enough to permit the pipe to slide through them easily.—Livingston Peck, Arcade Machine Works, New Milford, Conn.

## No. 1544—GEAR-PULLER WEDGES

To prevent the arms of a gear puller from slipping off the work, iron wedges are slipped under the crotch of each arm and given a light tap with a hammer. The wedges are tapered, and have heads to facilitate easy removal.—B. C. Adams, Adams Garage, Knot, N. Y.

## No. 1545—PLUGS FOR FORD CYLINDER-HEAD-BOLT HOLES

Seventeen wooden plugs made to fit tightly the Ford cylinder-head-bolt holes are screwed in before scraping the carbon from the piston heads and valves. These plugs prevent carbon particles from getting into the holes. Filling up of the holes is a frequent cause of thread stripping and twisted-off bolts owing to the fact that the bolt cannot be set down tight enough to hold the head securely before the bottom of the bolt is stopped by the carbon.—M. H. Manning, Port Chester, N. Y.



# Editorial Observation

## Tests—and Tests

**Y**EARS and years ago, when motor cars first began to stagger around on four wheels and it was the wonder of the country that they ran at all, a test was the thing in the best motoring circles.

The manufacturer who wanted to prove that his car would run four blocks and a half without having asthma arranged a test. Often there were tests in which any and all cars participated. There were tests of every kind. Cars were tested and scored on numerous points. The test was the thing.

These competitions were generally supervised by some competent authority. The figures bore the stamp of some recognized authority, such as the A. A. A. or some other body. No man for a minute considered running off an unapproved test, because he knew the results would be of no value. People would say: "Who was in charge of your tests?" And if he could give no good answer his figures were open to suspicion.

And so there were runs and races and contests of many kinds. And cars went into these and stood or fell on their merits. A few fell, many stood, and out of it all came a production of high-grade cars.

But after the fact had been established that cars would run and that almost any car was a good buy, the test business fell off. The test idea seemed to become passé for the simple reason that things didn't seem to need much testing any more.

During later years, however, a need for tests arose, and it exists to-day, and for certain things we should be having the bona-fide authoritative tests of the earlier days.

The industry has during recent years developed numerous accessories, such as tires, carbureters, fuel inventions, springs and a great mass of other products. For these the producers make claims, all of which may be entirely sound for all any one knows, but the claims lack value unless there is authority back of them.

Furthermore, some day some irresponsible promoter may come along in the carbureter field and make extravagant claims for a device and thereby do untold damage to the whole class in which he enters. He may become a disturbing factor, because there is no way to separate him from the better element in the trade. So far as the public is concerned they are "all alike."

If, however, the holding of tests were the fashion to-day, as it used to be when cars were in their trial stage, the good ones would have evidence to back up

their claims and the poor ones would be prevented from getting by on unsupported assertions.

General competitions might be held or tests might be made by some accredited engineering laboratory whose word is undisputed. The tested devices then could carry the stamp of authority and the buyer would have some assurance that he would get some degree of satisfaction.

That the germ of the test idea still lurks in the minds of men is evidenced by the fact that unofficial tests are staged now and then by the makers of products. These tests are not, however, generally of an authoritative character. The makers sometimes stage these tests under their own auspices, which at once lessens the value of the results, not because the maker is unreliable but because the public doesn't place maximum value upon tests that do not bear the stamp of an impartial authority.

In the tractor field the various demonstrations and competitions held nationally and otherwise have not been the real tests they should have been. The machines have not been put into the keen competition that cars met years ago. It has not been possible after a demonstration to analyze the figures and determine just how tractors stand in their relation to one another.

At Harrisburg there was a real attempt at tests. Tractors were required to prove their advertised claims as to speed, plowing capacity, fuel use and consumption, and other points. Some did and some didn't. Some that failed did so not because they couldn't make the grade but because the operators and entrants didn't appreciate the nature of the tests and didn't prepare as thoroughly as did the drivers and entrants in the old motor car tests.

Also, a New York newspaper is arranging a competitive test of fuel devices and inventions, a class of product concerning which extravagant claims are said to have been made in some instances. If this test, as ultimately worked out, bears a real official character the results will be good.

The revival of the fashion of having things tested would help a lot. It would help dealers wonderfully. In the first place, they would know what they could safely stock, and in the second place they could have some assurance that what they stocked could be sold without an expensive sales effort. If dealers would take up the test idea and urge it upon makers of devices that need testing it would be effective in reviving a good but by-gone fashion.



## Letters from Readers

*THIS page is for the use of MOTOR WORLD readers with something to say. Letters on subjects of interest to dealers, garagemen, repairmen and jobbers are always welcome.—EDITOR.*

### An Organizer Airs His Troubles

#### Did This Ever Happen in Your Town?

Editor Motor World: Enclosed is a letter which expresses a few thoughts on the subject of organization. Perhaps the readers of Motor World may be interested in reading it. The N. A. D. A. is going nicely.—E. E. Peake, Executive Secretary, National Automobile Dealers' Association, Kansas City.

The National Association of Auto Dealers, St. Louis, Mo.

Gentlemen: Yours received in regard to the organizing of the dealers in the Northwest. I do not believe that a letter arrived at more opportune moment, as I had just got the point that I did not believe that it could be done.

As you know, I am a member of the National Association of Automobile Accessories and Jobbers' Association and was one of the members indicted by the government for trying to do what the government is now doing. I have always been a strong advocate of the policy of the automobile dealer, the garageman, the accessory dealer, the hardware man, vulcanizing concerns and all the kindred interests getting together in each town and making such changes as would benefit all concerned.

With this idea in mind I started out filled with pep, and all that goes with it, to organize the dealers in the various towns in Montana, Idaho, Wyoming. Well, I want to say that it takes pep to do it.

#### Association Decently Interred

To start with, there is in most towns of any size the remains of an old-time dealers' association that lies buried because no one took any interest in it after the first two or three meetings. On arriving in a town I would get busy and find out who the officers of this association were and interview them. I generally found that they were not very enthusiastic on the subject because they had tried so hard to get some place with the association and failed for lack of interest on the part of members caused by jealousy, personal interest, ignorance, etc.

This original association was organized in most cases for automobile dealers and distributors only, not taking in the kindred industries which caused the first

disturbance. They had nothing in common with the garagemen and others in the same line which gave the impression that they were trying to HIGH-TONE the proposition. The little fellows did not take any stock in the deal, as they felt that the large automobile dealers or distributors were running the association. They did not have brains enough to know that someone had to take the lead. Just like our armies, there cannot be all captains or generals and no privates.

#### They Started to Lose Money

Well, they had two or three meetings and then attendance began to drop off and pretty soon they buried Old Man Association. They would not give in to ask each other on various subjects when the differences came up, but decided they would go ahead without co-operation. Right there is where they all started to lose money; but they cannot see it. The only way they see anything is when the sheriff comes up with a hammer and nails and puts the Indian sign on the ranch. In other words, he is closed up; then is when he sees the things. But it is too late and he is too narrow to admit it.

Well, the time drifts along until there is suddenly some local legislation against the automobile business and they start to dig up the corpse of Old Man Association. They haul him forth with grand acclaim and say: "We'll show these guys that we are organized and start something right away."

They have their meetings and there is a great flow of oratory, and tables are hammered upon, and the lie is passed—and they go home. And that is all there is to it.

There is the one dealer at the meeting who says: "Well, boys, I have got a date, but anything you will do will be O. K. with me," and gets up about fifteen minutes after the meeting has started and beats it to a meeting of the Poker Club, or he is doing duty on the side lines for a church social, tiling the floor to the inner sanctum of a blind pig—if it is in a dry state—and a hundred-and-one other things that could be put off in preference to such a vital thing as his means of

livelihood. Sure, anything they do that is just it, let George do it. But this fellow who says "Let George do it"—can you see this bird when they do something and he has not been at the death begin to throw a fit and yell: "Robbers, they are ruining the business"? Just let one or two men take the reins in their hands and start to do something and right away all the arm and hammer club get busy on the outside and begin to throw the sharpened harpoon into these willing workers.

They begin to yell: "They are using the association to further their own interests. They are putting over crooked stuff. They don't understand our business. They can't adopt the same methods for our business that they do for their own," and so on without end. Amen.

Soon the willing workers get tired of being vilified and say "What's the use?" and let the association go by default. Then the Ancient and Honorable Order of Amalgamated Mud Slingers and Users of the Anvil of the United States of America are satisfied and say, "Well, I told you so; it could not be done; you see how hard I worked to make it a success, but they would not hold together." The automobile dealers have no sense of co-operation, say they.

#### Get Warring Factions Together

I have read with a great deal of interest the various articles put out by Motor World, *Motor Age*, etc., and the bulletins by our good commissioner, Mr. Webster, of Chicago, and it must be some way to get these warring factions together. I realized that it was a golden opportunity for the accessory jobber to try and so made arrangements accordingly.

The first thing to do was to get the dealers together at a meeting composed of all the industries of the automobile trade. Now this is some job in a town of any size. If you don't think so, try it some day and you will find out. You have first to get one dealer who has got pep and go and interest him a good deal; in fact, you have to sell him the association just the same as you sell goods. Then when you see the dawn of enthusiasm beginning to light up his face, you suggest that they take a car and go around and visit the dealers, garagemen, vulcanizers, repairshops, hardware dealers, accessory stores, welding plants, etc., and invite them to attend the meeting.

#### Klu Klux Klan to Kill Germans

Right away they think you are organizing a Klu Klux Klan to kill all the pro-Germans, so you very patiently explain the situation to them, which generally takes about one hour to each man who will never make an active member. The one who gets it right off the reel generally makes a pretty good member.

They all say that they will be there all right, and then as you are the Master of Ceremonies you are right on time at the meeting place and you begin to wait for the members. The majority don't want to seem to be too interested in the matter, so they make it a point to go down and play pool until about one hour or so after the meeting is supposed

to start, then they come drifting in with a look on their faces as much as to say, "I dare you to make me co-operate," or "I wonder who's going to get some free newspaper publicity out of this."

#### Thinks New Association Unnecessary

Well, they all sit down with that free and easy abandon and begin the old-time chatter of the village cut-up, until you feel the evening is getting late even if we do have a daylight saving law. So you call the meeting to order and have the dealer who has shown enough interest in the proceedings to take you around to open up with a little speech telling the dealers of the seriousness of the times and why they should organize. Right away Rip Van Winkle on the extreme end jumps up and says: "Why, what is the matter with our old association? I don't see why we should have a stranger come in here and tell us what we should do." He was referring to me there, the little organizer. "Our old association is all right and I move we do not have any more associations in town. We have got too many already."

Well, after this GAS ATTACK we take our breath and begin to tell the dealers that the old association is dead because no one took any interest in it, but that we want one now that takes in all the automobile trades so that everyone in the town has a voice in the running of the association. Then after we get them all feeling that it is really for the good of all concerned that we are getting the boys together, the member who has some personal spite against some dealer in town gets up and begins to tell about how we cannot control the price of gasoline on account of some price cutters and some one gives discounts on tires and all the old Stone Age stuff.

After we smoke the Pipe of Peace and extend the Olive Branch, we bring up the various benefits that will accrue from the association, and they think about going home so they can get in perfect harmony and are willing to put through most anything.

So we decide at the next meeting to elect our officers, fix up the by-laws and go to it with a regular automobile trades association.

#### Not a Corporal's Guard Present

At the next meeting for some reason we feel that on account of the good attendance at the first meeting it will not be necessary for anyone to get out and get the dealers up by telephone, and they all say leave it go by calling all the dealers up by telephone, and they all say that they will be there all right, but when the evening arrives—lo and behold! there is not a corporal's guard at the meeting. Big disappointment.

We then make arrangements for another meeting and ask all dealers to be there at any price, and then the writer makes it his business to take a car and go around the day of the meeting and get all the dealers to promise to be there that night, and they all promise, but say: "Now anything that you do will be O. K. with us." The night arrives and

with the added effort we have a pretty good attendance. In the meantime the Arm and Hammer Club have been busy among the faithful and have been practising sabotage, which is throwing a wooden shoe among the machinery. So they begin to arrive with a set and firm look on their faces as much as to say, "I dare you to organize me!" Then comes the election of officers, and they generally pick out some one for president that stands pretty well in town as regards position, resources, ability, etc. This gentleman immediately says he is overcome with the honors thrust upon him by the admiring circle of business associates, but on account of having so much business in the way of lodges, Third Assistant to High Chef for the Weekly Clambake, telling how to win the war at the club every other night, and so forth, he will have to decline the honor of heading an organization for the betterment of his personal business. Anyway, we at last prevail upon some one to take the jobs running the association and we are on our way.

I have tried to bring out the following for the betterment of all dealers in their association:

#### What They Should Do

*Two meetings per month.*

*A credit association, with all dead beats listed.*

*An annual picnic.*

*All going on as near a cash basis as possible.*

*Adopting the trade acceptance in their business.*

*Regulating the hours of business opening and closing.*

*Cash returns for labor; what they shall charge per hour.*

*Boycotting any jobber that does not adhere to the principle of selling at wholesale only to those who buy for resale.*

*Eliminating retail sales by jobbers.*

*Eliminating corporations by jobbers.*

*Eliminating laundries by jobbers.*

*Eliminating groceries.*

*Public corporations and all the other pernicious practices that have been put over by the jobbers with buccaneering methods.*

*Opening up a used-car appraisal mart so that allowances would be uniform.*

*Getting up automobile shows.*

*Getting up tractor demonstrations.*

*Getting away from free service.*

*Exchanging ideas for labor saving in the shop and office.*

*Co-operating against unjust legislation.*

*Educating the public along progressive lines.*

These are just a few of the things that can be accomplished by a live dealers' automobile trade association.

This goes big this time and they are all for the progress. Well, we adjourn and the meeting is set for next time. When next time comes, if you do not devote the entire day on your own time in getting the dealers out for their own benefit, they will not show up. You arrive at the meeting place and then at 9:30 there is still not a quorum and they

get disgusted and go home. Fine, fine.

And from that time the attendance gets smaller and smaller. You then call a meeting and tell them if they do not want to get together we might just as well forget the association, and they all say: "Fine. It can't be done; we have all worked hard, but the dealers will not stick together."

The above is a fair sample of the results that you obtain in a general way. In other words, after you struggle and strive and spend your own time and money to benefit the other fellow he thinks you are making money off him in some way.

#### Must All "Give Up"

The only way that I can see to get the dealers together is first of all to call a meeting and ask them if they think enough of the proposition to give up \$25 or \$50 as a starter to get an association, and go out after these things right. If they do not think it will benefit them \$25 or \$50 worth—why, you cannot organize them. They will not pay any money to start with if they do not think they are going to be benefited, and then they want to pay only \$5 or \$10, if they think they were going to get \$100 back, and then when they pay \$5 or \$10 they have not got enough invested in the project to take any interest in their own welfare.

If a town with ten dealers will not put up \$25 each year your association is going to be a fizzle.

Get the dealers to pay in about \$50 a piece, so that they have some real money invested, and then pay a secretary to keep the fat in the fire and then you may get some place.

I have worked my fool head off, spent money like a drunken sailor and talked until they thought I was a nut, but it cannot be done.

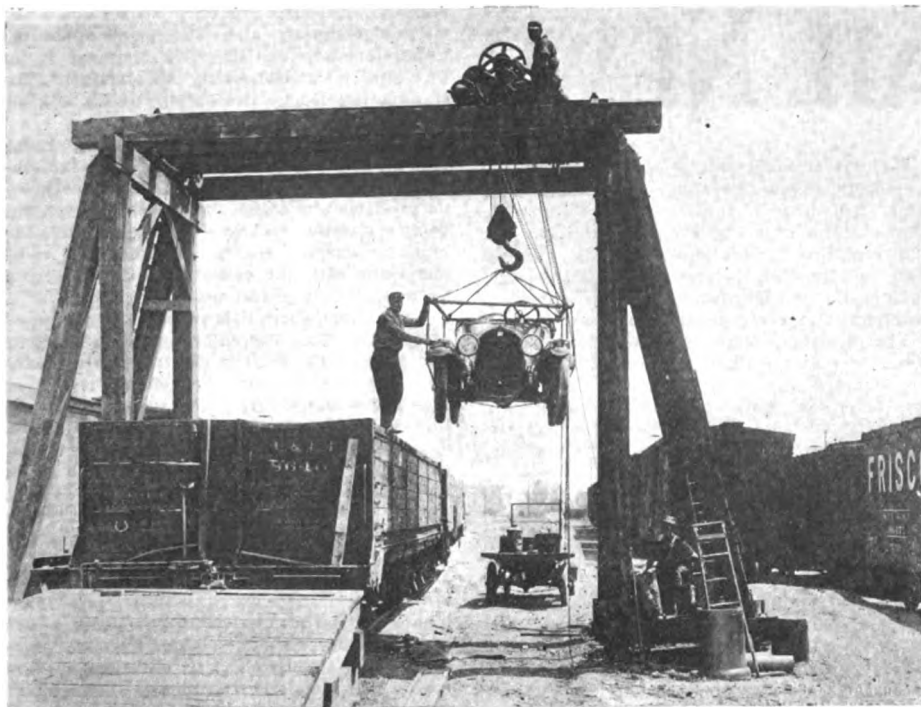
Any suggestions you have to offer, why call on me for the good of the trade and I sure will try and put it over; but I tell you that without money invested in a large enough sum there can be no results.

I await your reply with interest.—J. STANLEY CLEMENCE, Northwestern Auto Supply Co., Billings, Mont.

#### This Is Funny

Editor Motor World: So you couldn't read that last effort of mine? Well, Sir, just to inflict the proper discipline, I laid me trusty pen aside till I could get to one of these educated machines, feeling all the while that your education has been sadly neglected in so much as you could not read the flowing script for which I am so famous. Can't say at that that I do a great deal better on one of these than I do with the quill. A page of this generally looks as though I had shaken the words and letters out of a salt shaker and let the quips fall where they would. No apology meant at all, simply stating facts.

Was very much pleased to get this assignment, as my people live about two miles from this field, so here I am happy

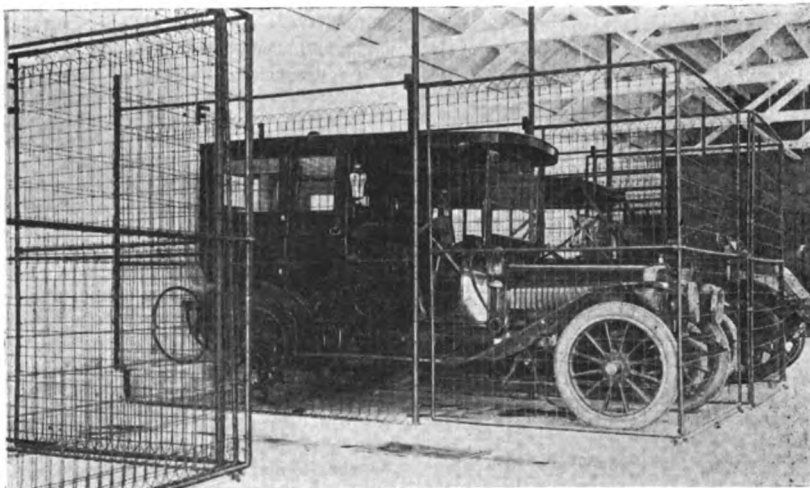


**H**ERE'S the way they're unloading automobiles in Dallas railroad yards. For the most part they are now being received in coal cars. The doors of these cars are immovable and the cars have been hard to get out. Foreman Edward Robinson of the Buick Company in Dallas invented this set of slings, which drop down and fit over the hubs of the machine's wheels. By this method, as can be seen in the picture, a machine can be lifted out of the car and placed on the ground within 3 minutes.

in the bosom of my family, or words to that effect. But, man, it sure is good to get home to that little girl of mine again, and aside from the fact that I have on the khaki shirts et cetera it really is rather hard to get the impression that the war is still going on. Sorta feel like a slacker, Ray, having it so soft here right at home. Go in every night and get real food while these other birds have to stay out here and eat the chow that they serve at the mess. I am assistant engineer officer here, plenty to do, and I like it.

Had my first ride yesterday. I have been around these ships for some time now, but until yesterday I have always been too busy to go up. Yesterday, however, I took the bull by the horns and got the ride. Mister, I want to say right now that I am perfectly willing to fix 'em, but they will have to fly 'em, for I have no craving in that direction. I told him to do every damned thing that he knew how to do; man, man, he sure knew a lot. We first went up 5500 feet before he started the show—and then he cut loose. Two loops first, then two Immelman turns, four barrel rolls where you turn her over and over sidewise, some tail spins, then he side-slipped for a thousand feet into the field. Fortunately I didn't get sick, but I am frank to admit that it was not due to any bravery on my part, but just to the fact that I happen to be constructed all right in the inside. I thought of the wife and felt sorry because I knew that she would feel badly when they brought me in and they told her that they had scraped me up and that I was outside in a pine fruit jar. I thought that when he nosed her over to go into the first loop, when there

was nothing between me and the hard, hard ground but a mile of soft, yielding air—I thought it again when we hit the top of the loop and I was dangling there very close to St. Peter, both ways. Then the Immelmans, no wonder that fellow killed them off when he was working.



**J.** L. STONE and J. G. Dancy, proprietors of the Kay-Ess Garage, Los Angeles, Cal., have introduced a novel system of locker cages for storage purposes. These locker cages are heavy steel netting hung on a steel frame. They are neat and light enough to be moved with little difficulty.

The safe deposit storage vault is very popular with motor car owners, as it is an insurance against joy riding by either members of the family or employees of the garage. The steel cage also protects the car from scratches and other damage that might come from careless driving on the part of an employee or customer of the garage. The owner need have no fear of losing any of his accessories or equipment while the car is in storage.

An owner may work on his car inside the safe deposit cage, and, if called away, leave parts and tools where they are on the floor or running board and know that they will not be bothered until he returns and opens the Yale lock and enters the cage. There is but one key to each of these cages, which are rented at approximately the same amount as the usual rent stall marked off on the floor with white or black paint.

You start the loop, but when you get to the top you give her half a barrel roll and she flops over right side up and you are going in the opposite direction, fast. I tried to think all the time we were doing those stunts what I would do if I had hold of the stick. I couldn't think of a thing and I reckon that I and the ship would have been interchangeable in a mighty short time if I had had it. It was a wonderful ride and I enjoyed it, but I can't say that I care to take it up for a living, as the Lady might find some fine day that she was drawing a pension.

Haven't heard from the factory; guess it's because I haven't written and they don't know where I am. I suppose, though, that they are managing to keep soul and body together without much trouble.

Drop me a line soon, Ray. The Lady said to tell you that she enjoyed your letters as much as I did, so you can see plainly that we expect an answer shortly.

I thank you.

FRANK J. STANLEY,  
Formerly with McQuay-Norris  
Mfg. Co.

Payne Field, West Point, Miss.

#### Jarvis Fuel Consultant

PHILADELPHIA, Sept. 21—The fuel administration has appointed Claude S. Jarvis, president of the Quaker City Taxicab Co., gasoline vehicle consultant by Fuel Administrator William Potter. He will make a survey in the State to ascertain how many gallons of gasoline are used daily by the various groups of vehicles. With the tabulation as a basis, an educational campaign for fuel conservation in this direction will be started.

# The RETAIL NEWS

## SOUTHWEST

Andy Hager, Belpre, Kan., has succeeded T. H. Goodell in the garage business.

O. T. Tarr, Caney, Kan., has bought his partner's interest in the Square Deal Auto Co.

Otto Wilcox, Concordia, Kan., has sold his garage business and supply stock to Sheridan & Murdock, who will continue to do business at the same place.

Fred Byerly and J. B. Watts, Concordia, Kan., are installing a tire and repair shop at Hastings, Neb.

The Empire Gas & Fuel Co., Augusta, Kan., is planning to erect repairshops upon Oil Hill, El Dorado, Kan., for repairing its Dodge and Ford cars.

The El Dorado Tire Service Co., El Dorado, Kan., has completed the installation of the new equipment in its tire repairshop. A. J. Shank, formerly with A. J. Henson, will have charge of the repair department.

The Merrill & Cromb Garage, Ellis, Kan., has opened under the new management of Sullivan & McCurdy.

R. R. Elder, Fredonia, Kan., has purchased the Blue Front Barn of F. O. Sanders and will conduct an exclusive automobile livery business.

The Auto Repair & Supply Co., Haven, Kan., formerly reported closing out, is open for business.

Koch Bros., Haven, Kan., have the new agency for Kelly-Springfield tires.

The Helms Electric Co., Hutchinson, Kan., has purchased the entire equipment of the Western Tire & Battery Co.

N. B. Rees, Lincoln, Kan., is successor to Henry White in the vulcanizing and repair business.

Hartwell & Bronaugh, Mayetta, Kan., have succeeded T. F. Waters in the garage business.

J. W. Keele, Topeka, Kan., has opened a Willard battery service station at 116 North Third Street, Manhattan, Kan., under the name of Keele, The Battery Man.

George Bernard, Norton, Kan., has purchased the garage and automobile business of Floyd Cope at a consideration of \$25,000.

The Martindale Motor Co., Olpe, Kan., has succeeded the Wright Motor Co.

The Standard Oil Filling Station, Olathe, Kan., has opened for business. It is equipped with free air, free telephones and a rest room.

G. W. Willis, Washington, Kan., will be manager of a new garage which will handle the Chevrolet car and do a general garage business.

Noah Leak, Bellflower, Mo., has opened the Bellflower Garage, with his own plant for lighting and charging.

Albert Hutera, Cape Girardeau, Mo., has bought Alvin Cotner's interest in the Hope-Cotner Garage.

Barkwell & Co., Columbia, Mo., have opened a garage and repairshop.

The Jessup Motor Co., Hannibal, Mo., has opened a garage.

The American Tire Co., Joplin, Mo., automobile supplies, will open branches at Carthage and Webb City.

The Redell Motor Co., Joplin, Mo., is moving its Hudson salesroom and service station to 618-20 Wall Street, the Selden truck headquarters remaining at 518 Virginia Avenue. J. T. Hughes is manager.

J. F. Reinmiller, Joplin, Mo., has closed out the Southwest Tire Co. and is with the Joplin Tire Service Co.

Robnett Bros., Durant, Okla., have opened a garage in the rear of their salesrooms. They will also do repair work. They have changed the name to Finley Motor Car Co.

Sitton Bros., Weatherford, Okla., moved into the building formerly occupied by the Palmer-Potter Hardware Co., where they will continue their garage business.

The Tension, Blair & Frey Co., Dallas, Tex., has moved into its new quarters at Preston and Commerce Streets. Five floors are being utilized, aggregating more than 25,000 ft. of floor space. The firm has the state agencies for both Texas and Oklahoma on the Briscoe and Lexington.

Ray Harrell and W. W. Whitehead, El Paso, Tex., have taken charge of Richardson's garage, Second and Kansas Streets, and will operate under the name of Harrell Auto Co.

E. H. Robinson, Huntsville, Tex., will open a garage and repairshop under the name of Central Garage.

W. W. Pruett, McKinney, Tex., has purchased the garage of R. A. Joplin and has taken charge of the business.

## New Garages

J. H. Yount.....Sikeston, Mo.  
South Topeka Garage & Oils..Topeka, Kan.  
H. A. McGuire.....Pittsburg, Kan.  
Dressler Garage & Supplies,  
Carruthersville, Mo.

## MIDDLE WEST

F. S. Milward of the Ford Sales and Service, Pontiac, will from now on sell the Cadillac as a sub-dealer under Joseph A. Picard, proprietor of the Cadillac Garage, as well as the Ford, from his salesroom on West Pike Street. The service on Cadillac cars will as usual be continued at the Cadillac Garage, even though the purchase is made through Mr. Milward.

The Akron Vulcanizing & Retreading Co., Grand Rapids, Mich., is now under the management of W. A. Mathews. In addition to the tire-repair business the company will retain the agency for Maxo tires.

Wilbur Johnson Co., Indianapolis, Ind., has taken over the distribution of Saxon automobiles in Indianapolis and in forty-seven Indiana counties and five counties in Illinois. The deal was made with the Barkley-Wonser Sales Co. by which the Wilbur Johnson Co. takes over that company's interests. The Barkley-Wonser Sales Co. has retired from business until after the war.

The Wealthy Street Garage, Grand Rapids, Mich., has been opened at 1130 Wealthy Street, in the building formerly occupied by the Michigan Aircraft Co. Walter Prinz and Ray Schouw, who for some time operated the repairshop at the old Wealthy Heights Garage, are proprietors of the garage.

Henry DeBruin, Grand Rapids, Mich., proprietor of the Colonial Garage, has leased the building formerly occupied by the Wealthy Heights Garage at 646 Wealthy Street and has recently moved there.

The Saxon Motor Car Co., Detroit, has established a branch office in Milwaukee under the management of K. W. MacRae. The office is located at 405 Jefferson Building, 422-424 Jefferson Street.

The Welton Motor Car Co., West Main Street, Madison, Wis., Studebaker dealer, has leased the No. 2 garage of the Madison Motor Car Co., at 245 State Street, which

will be its headquarters hereafter. The Welton company also has been appointed Republic truck dealer. The Madison Motor Car Co. is consolidating its business, including the Dodge dealership, at its original garage at 325 West Gorham Street.

The Wetmore-Quinn Co., Detroit, Paige distributor, has changed its name to the Paige Company of Michigan and is incorporated with a capitalization of \$50,000. The company was recently purchased by the manufacturers. R. H. Schmittsiehl, who has been with the company four years, has been appointed retail manager.

The Lockwood, Mandel, Schwarzman Motor Car Co., Bloomington, Ill., has been taken over by Dayton Keith, former manager of the Chicago branch of the Ford Motor Company. The new concern will be known as the Dayton Keith Co. Kelly R. Johnson, formerly sales manager of the Chicago branch of the Ford company, will be associated with Mr. Keith. Harry Morris, former service manager of the Chicago branch, will have charge of the mechanical department at Bloomington. Joseph E. Lockwood, manager for the L. M. S. Co., will be retained by the new proprietor. There will be no change in the general plan of operation, excepting that Fordson tractors will be distributed in addition to Ford cars. The company occupies a plant erected two years ago and which ranks as one of the largest and finest in the city. Messrs. Mandel and Schwarzman, who were previously associated with Mr. Lockwood, are owners of one of the largest department stores in Bloomington.

## New Garage

Bemis Garage Co.....Oregon, Ill.

## NORTHWEST

The Northern Auto Sales Co., St. Paul, has opened at 2654 University Avenue W.

R. J. Kuhl, Humboldt, S. D., sold his garage business to Clarence Geister of Parker, S. D.

The Midland Motors Co., Inc., Minneapolis, has opened a branch for the Maxwell-Chalmers at 220 East Superior Street, Duluth. N. D. Meisner is zone supervisor and R. M. Tanner is local salesmanager.

The Power Auto Co., Sioux Falls, S. D., has moved into the new Watson garage, Weber Avenue between East Fifth and Sixth Streets.

The Minnesota Tire Co., Minneapolis, has opened a branch at 121 West Tenth Street, Sioux Falls, S. D.

The Overland-Doyle Co., Fargo, N. D., has moved into new salesrooms in Labor Temple, occupying two floors and basement, 50 x 150 ft. The shop is on the second floor and storage in the basement.

The Spry-MacArthur Co., 2315 Hennepin Avenue, Minneapolis, has been formed and will distribute the Milburn electric.

The Hulick Motor Sales Co., Ada, Minn., has selected Fargo, N. D., as its point of distribution, where it has maintained a branch office. It controls the Red River valley in Minnesota and North Dakota for the Oldsmobile, from Aberdeen, S. D., to the Canadian border. President R. B. Hulick has moved to Fargo.

Charles H. Secrest, Iowa City, has sold his garage to David Burkitt of Dallas Center, Iowa.

Western Auto Specialty Co., Iowa City, Iowa, has opened a Miller tire agency.

Peter Dale, Story City, Iowa, has sold his garage to Walter Baldus.

O. B. Young, Shenandoah, Iowa, has bought the D. R. Johnson garage.

Henry Hohman, Farley, Iowa, has sold his garage to Henry George of Dubuque.

The Blue Grass Garage, Chariton, Iowa,



has been reopened under management of Max Lamb.

H. R. Harper, Clarinda, Iowa, has leased the Nobles tire and battery shop.

B. R. Hendricks, Western, Neb., has bought the garage of J. M. Van Auker.

Fred Gruber, Byron, Neb., has bought the garage of W. H. Lane.

Savage Brothers, Elpin, Neb., have sold their garage.

Wilts Brothers, Diller, Neb., have bought the garage of John Jobman.

F. Klinklaw, Steele City, Neb., has bought the Steele City Garage.

John Kritenbrink, Clarks, Neb., has sold the Zweifel Garage.

M. F. Mynard, Chappell, Neb., has bought the Searle Garage, Ogallala, Neb.

E. R. Polly, Homer, Neb., has bought the Ideal Garage from Glen Dunlap.

W. S. Barker, Tekamah, Neb., has bought the garage of C. Harry Smith.

Herbert Farmer, Cody, Neb., has bought the Cody Garage.

H. Hallenbeck, Peru, Neb., has bought the North Garage from Bishop & Bedell.

Emil Mewis, Plattsmouth, Neb., has bought the tire shop of H. D. Coleman.

Pautsch Bros., Denison, Iowa, have bought the Denison Auto Co.

B. O. Buchanan, Buffalo, S. D., has bought the interest of J. J. Ashcroft in the Ashcroft Garage, Belle Fourche, S. D.

R. J. McAllister, Atkinson, Neb., has bought the Gregg Garage.

P. F. Hall, Central City, Neb., has added a repairshop to his garage.

B. F. Erb, Lodge Pole, Neb., has bought the interest of his partner, Mr. Hicks, in the Lincoln Highway Garage.

Lee Gibson, Carroll, Neb., has bought the repairshop of the West Garage from W. R. Olmstead.

R. B. Smith, Glenwood, Iowa, has bought the Glenwood Auto Co.

Fred Schneckepfer and Thomas Wilson, Galva, Iowa, have bought the Hawkeye Garage.

Beghtel & Harris, Indianola, Neb., have bought the garage of L. G. Trimpey.

Ivan Eckhart & Son, Correctionville, Iowa, have bought the Specialty Sales Co. from L. W. Geer.

William Brown, Brock, Neb., has bought the Oldsmobile Garage, Nebraska City, Neb., from Venner & Yoho.

James Lamberton, Osceola, Neb., has opened a repairshop.

The United Service Co., Omaha, Neb., has opened a service station at 2027 Farnam Street.

The Crumbliss-Van Doren Co., Omaha, Neb., has moved to a new location at 2027 Farnam Street.

The Card-Adams Co., Lincoln, Neb., has bought an interest in the Morris Truck & Tractor Co., which adopts the style Card-Adams & Morris.

Acme Truck & Tractor Co., Omaha, Neb., has opened a new service station.

The Powell Supply Co., Omaha, Neb., has bought the \$50,000 stock of the Omaha Auto Supply Co.

#### New Garages

Nebraska Motor Sales Co.....Omaha, Neb.  
Brown & Clarke.....Berlin, Neb.  
Fritz Nicklas.....Syracuse, Neb.  
Flatiron Garage Co.....Lincoln, Neb.  
E. A. Reetz.....Hooper, Neb.  
West Side Garage.....Hastings, Iowa  
Lincoln Highway Garage.....Rock Springs, Wyo.  
National Motor Sales Co.....Omaha, Neb.  
C. F. Keffer.....Creston, Iowa  
Manhattan Oil Co.....Colfax, Iowa  
Beason Garage.....Audubon, Iowa  
Prest-O-Lite Station.....Cedar Rapids, Iowa  
Tierney, Ahmann & Schroder.....Remsen, Iowa

King & Perry.....Calvin, N. D.  
Henry Porter.....Walhalla, N. D.

#### EAST

The Wilmington Automobile Co., Wilmington, Del., which already has one of the largest sales, storage and repair establishments in the city, being a block long and 200 ft. wide, has had plans drawn for a large addition. Some time ago the company bought the Avenue Theater, which had been destroyed by fire, and it is on the site of the theater, at Delaware Avenue and Tenth Street, adjoining the company's garage, that the addition is to be built.

#### PACIFIC COAST

C. G. Jacka and W. W. Jacka have established the Franklin Vulcanizing & Tire Co., at 1596 Market Street, San Francisco.

W. E. Cogswell, Klemmer Bros. and W. H. McMorry have entered into a partnership and opened a general accessory store at 1712 K Street, Sacramento, under the name of C. K. M. Tire & Supply Co.

Sims & Youman have purchased Winters' Garage at Winters, Cal.

Robert C. Wilson, formerly of Pasadena, and Ed Ahlswede have organized the Sacramento Electric Vehicle Co. and acquired the electric passenger car business of the James F. Pieper Co., the Graham & Lamus Co. and of the Lincoln Highway Garage. Salesrooms at 1910 M Street, Sacramento, will be maintained for the Rauch Lang, Detroit Electric, Milburn Light Electric and Walker Electric truck. The charging plant has a capacity of 250 horsepower.

W. W. Drullinger has become sole owner of the M Street Vulcanizing Works at 2008 M Street, Sacramento.

Mecum, Flynn & Hunter Co., Chandler dealers in Sacramento, have moved to larger quarters at 1416-1422 K Street.

Ralph L. Skinner, at Fourteenth and U Streets, Sacramento, has added a special department for tractor repairs.

The Gray Bros. Service Station has been opened at 927 L Street, Sacramento.

The Auto Tire Repair Co. has been established at 1325 K Street, Sacramento.

Peck & Pullen have dissolved and B. J. Peck has been appointed manager of the Oakland branch of the California Motor Sales Co. at 3034 Broadway.

R. C. Hauxwell has purchased the tire store at 1009 Fourteenth Street, Sacramento, from Russell & Riordan.

A. F. Noble has opened a tire and vulcanizing shop at 1227 J Street, Sacramento.

W. E. Bright, formerly with the Goodrich Rubber Co., has purchased a half interest in Decker's Tire Shop, Sacramento.

The Consumer's Tire Co., 1312 K Street, Sacramento, has been sold to G. C. Hickingbotham.

York & Cleal have erected a new building at 610-614 I Street, Sacramento, which will be conducted as the Court Garage.

Fred Regalia has purchased the repairshop at 15 Duboce Avenue, San Francisco.

The J. A. Thompson Automobile Machine Works has moved to a new building at 444 Howard Street, San Francisco.

Graham & Lamus Co., 711 M Street, Sacramento, has added tires to its line of supplies and specializes on Goodyear.

Goodrich, Ballard & Rouse, Ford dealers, have added a department specially for service on Ford commercial cars. The plant is at Seventh and M Streets, Sacramento.

The Marshall Garage, 1419 Pacific Street, San Francisco, has been appointed a Goodyear service station.

The Sacramento Tire Service, 1008 Twelfth Street, Sacramento, have stocked Goodyear tires exclusively.

G. P. Louthain, formerly with the Lin-

coln Highway Garage, has opened Oldsmobile salesrooms at 1327 K Street, Sacramento.

The Auto Parts Exchange, W. E. Everson, manager, has made extensive improvements on the premises at 1901 J Street, Sacramento, and has added a service and repair department.

L. H. Carver, formerly of Pleasanton, has purchased Rodehaver's Garage at Berkeley, Cal.

The Campus Garage, Berkeley, Cal., has secured the agency for the Chevrolet.

Simpson & Robb have opened a vulcanizing plant at 1985 Shattuck Avenue, Berkeley, Cal.

C. E. Surryhne has purchased the Universal Tire Co.'s store at 150 Twelfth Street, Oakland, and will continue as the Tire Rebuilding Co.

Charles A. Lyon has sold the controlling interest in the Class A Garage, 705 Post Street, San Francisco, to the A. G. Curtis Co.

W. E. Wallace and M. H. Cooper have adopted the firm name of Wallace & Cooper and opened an automobile light service station at 1235 Van Ness Avenue, San Francisco, and will distribute the I. C. L. lens.

The Henry Spring Co., Inc., has purchased the Lincoln Highway Garage at Sacramento and will handle the Stutz and White.

#### NEW TRUCK AND TRACTOR DEALERS

The Leonard B. Orloff Co., Detroit, has taken on the distribution of the Standard truck for Detroit and southern Michigan. The service station is located at 344 East Jefferson and the sales will be handled from the retail store at 475 Woodward Avenue. The company also handles the Hupmobile.

The Liberty Tractor Corp., Detroit, has been organized with a capitalization of \$100,000. The incorporators are: Frank H. Farnham, John O'Donnell and Ignatius Mirkovich.

Midwest Truck & Tractor Co., Omaha, Neb., will handle the Winther truck and Turner tractor.

L. J. Stoll, Lincoln, Neb., will act as agent for the All-Work tractor.

The Fanning-Mathis Co., Philadelphia, Pa., has taken the distributing agency for Standard motor trucks for eastern Pennsylvania, southern New Jersey and Delaware. The company will continue, as in the last five years, to handle Marmon cars. The salesrooms are at 720 North Broad Street.

The Reilly-Herz Auto Co., Minneapolis, will distribute the Garford truck in the Northwest.

The D. A. Odell Motor Car Co., Twin Cities and Duluth distributor of Pierce-Arrow cars, has added at the St. Paul agency the Bethlehem truck.

The Universal Motor Co., Twenty-ninth and M Streets, Sacramento, has secured the agency for the Fordson tractor for Central California.

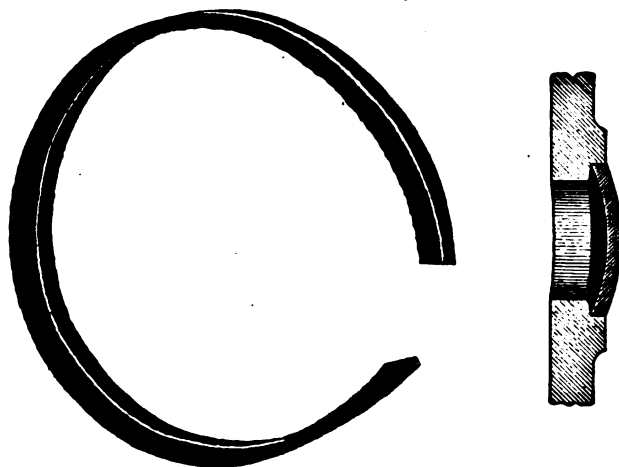
A. Ford & Son, Dearborn, Mich., have secured the sales and service agency for the Fordson tractor. A full line of parts and accessories will be kept in stock.

The Monroe Sales Agency, Grand Rapids, Mich., has secured the agency for the Tri-angle truck for western Michigan. T. Kortlander, Jr., and William Rae, who have been at the head of the agency for the past year, have recently purchased the Bailey Garage at 58 Commerce Avenue, thus acquiring the necessary additional space to care for the increase in business brought about through taking on the truck agency.

# Automotive Equipment

## WHITE STRIPE TRANSMISSION LINING FOR FORDS

This is a transmission lining for Fords, which is treated to resist the action and neutralize the effect of hot oil on the cotton fabric. The lining is marked in a distinctive manner with a white stripe running lengthwise of the lining. It is marketed in rolls or in pieces cut the correct length for the Ford. When in the cut form, three pieces are packed to the box. Price \$2 per box east of the Rockies, or 32 cents per foot when in the roll.—Advance Automobile Accessories Corp., 56 East Randolph Street, Chicago.



## WELCH EXPANSION PLUG

This core plug is intended primarily for manufacturers but would be useful to dealers and repairmen with casting jobs. It is used for closing core holes, closing bearings at ends, in fact, for closing any holes that are to be closed permanently by a tapered, cupped or threaded plug. They are easily inserted, require no threading, are slightly and may be finished flush if desired. When properly inserted they resist a pressure of 300 to 400 lbs. Assortments of springs, bent wire shapes and cotter pins are also put up.—M. H. Hubbard Spring Co., Pontiac, Mich.

## SAVIDGE VALVE LATHES

These bench valve lathes have been designed for Ford, accurate work and are made in two sizes. The Junior is for Ford valves and others with 5/16 in. stems and heads up to 1 3/4 in. with 45-degree angle seat. It is light, compact and quick operating. It is clamped to the bench or held in a vise. The price is \$5 with high-speed steel cutter. The Universal model faces valves with stems up to 7/16 in., 2 1/4 in. in diameter and with either 30 or 45 degree seats. The lathe is universally adjustable and is to be fastened to the bench. The price is \$10 with high-speed steel cutter. Extra cutters are \$1 each.—A. C. Savidge, Indianapolis, Ind.

## CARBORUNDUM VALVE-GRINDING COMPOUND IN COMBINATION BOXES

Carborundum valve-grinding compound is now to be had in a can which contains both fine and coarse compounds. The box is 4 in. long, 2 in. wide and 1 in. high and contains 2 oz. of each grade. A tin partition in the center keeps the grades separate. Price, \$6 per doz. boxes, filled with the two grades of compound.—Carborundum Co., Niagara Falls, N. Y.

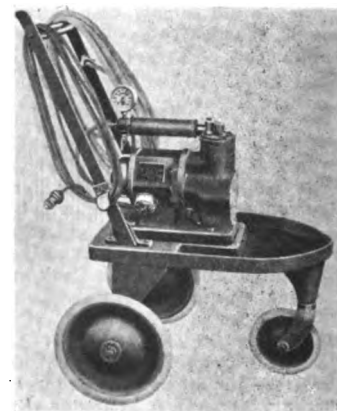
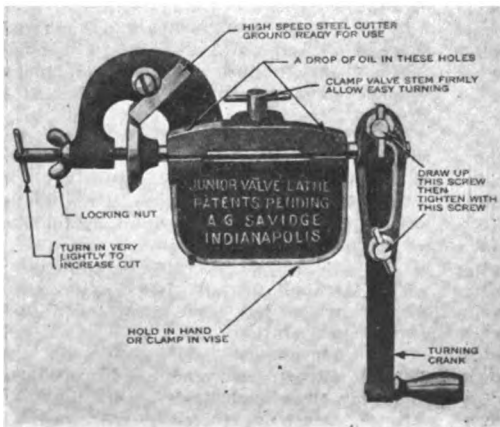
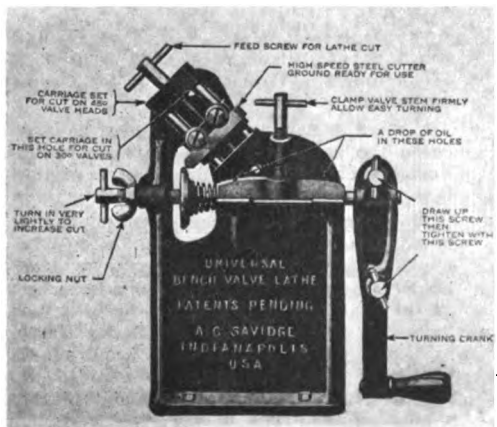


## FORD COIL-BOX PROTECTOR

This is a shield or protector for the side of the coil box that goes against the dash, and is to protect the coil box from rain and dampness. Holes are provided for the insulators to go through, and it is installed by removing the coil box and wiring, threading the wires through the protector, and then replacing the coil box with the protector between it and the dash.—Price, \$1.—Cooper Auto Supply Co., Thomasville, Ga.

## CARRIAGE LECTROFLATER

This is a complete tire pumping outfit which is electrically operated, is mounted on a rubber-tired carriage to form the Carriage Electroflater. It is intended that the device shall be moved about to the car needing tire inflation and the cord can be attached to the nearest lamp socket. The motor is universal for either AC or DC current. The tray, which is a part of the carriage, is suitable for carrying jack, tools, etc. The outfit is complete, with pressure gage, electric switch and 15 ft. of lamp cord. Price ranges from \$65 up, depending on the style of compressor used.—Black & Decker Mfg. Co., 107 South Street, Baltimore.



## Essential Users of Motor Trucks Listed

**Twenty-three Industries Included  
in N.A.C.C. Schedule—List  
May Be Modified**

WASHINGTON, Sept. 23—A list of essential truck users has been compiled by the truck committee of the National Automobile Chamber of Commerce, to be used by makers, distributors and dealers as a guide in the sale of motor trucks. The list has been approved by the War Industries Board.

Motor trucks may be sold to any user included in the list. They cannot be sold to anyone not engaged in the trades or industries listed without special permit from the War Industries Board. The list includes the 74 industries recently pronounced essential in a preferential list issued by the War Industries Board, 6500 individual plants included in that list, and the following trades and industries which were included following conferences between the truck committee and the Priorities Division of the War Industries Board.

Truck manufacturers have already filed their pledges to observe these regulations and have exacted similar pledges from their distributors and dealers. Consequently, hereafter the only necessary procedure in making truck sales is to make certain that the prospective buyer is one of the essentials as named by the lists. If his trade or industry is so named no further formality is necessary and the sale can be made. The industries and trades that are essential, besides those named in the war board's preferential list, are:

Seeds.  
Refrigeration.  
Bridge builders.  
Contractors, building, road, paving, sand, gravel, cement, bridge steel and garbage.  
Farm wagon manufacturers.  
Public haulage companies.  
Drayage concerns.  
Transfer companies.  
Casket makers.  
Cemeteries.  
Department stores.  
Elevator makers.  
Hardware manufacturers.  
Heating and ventilating concerns.  
Hotels.  
Hotel supply manufacturers.  
Linoleum manufacturers.  
Plumbers' supplies manufacturers.  
Stove manufacturers.  
Tent and awning manufacturers.  
Tire makers.  
Typewriter manufacturers.  
Warehouses.

Other industries may be added to the list later. At any time that a manufacturer or dealer has opportunity to sell a truck to a consumer not on the lists named, but who is, in the opinion of the maker or dealer, engaged in essential work, the manufacturer or dealer will request a written statement from the prospective consumer containing full details. This statement after endorsement by the manufacturer will in turn be forwarded to the Automotive Products Section, War Industries Board, for submission to the Priorities Division, and, if approved, a permit will be issued for the sale.

Necessary employees of motor truck factories will be considered in essential work by the district draft boards, providing the truck manufacturers have filed their pledges with the War Industries Board to observe the various regulations.

## Car Figures Higher in Used Car Report

**Eighteenth Edition of Chicago Book  
Shows Upward Trend as High as  
15 Per Cent—Market Firm**

CHICAGO, Sept. 24—In the eighteenth edition of the National Used Car Market Report, issued by the Chicago Automobile Trade Association, there is an upward tendency in used car prices. The book covers appraisals for September, October and November and actual sales for months that have just passed.

In the case of the Buick E-6-49, 1917 touring, the average appraisal price three months ago was \$815. In the latest book it is \$851, an advance of 4 per cent. The actual sales for the same car in the preceding book were \$903; in the latest book they are \$957.

The Cadillac 53, 1916 roadster touring, listing new at \$2,080, sold in the seventeenth edition at an average of \$1,298 and in the eighteenth edition at \$1,395, an advance of 8 per cent.

In certain zones certain models have advanced more than in other zones, due to local sales conditions, and in some cases there have been declines in prices, although the general tendency is upward. In its details of make-up the book is little changed from preceding editions.

### Car Tax Plans Unchanged

WASHINGTON, Sept. 21—There has been no change in the proposed tax on passenger cars, trucks and gasoline in the new revenue bill, although there has been considerable discussion on the part of the House regarding the tax.

Some suggestions have been received by congressmen, in favor of a yearly tax on the use of passenger cars based on their value instead of the horsepower, and suggesting the use of the used car lists used by the Chicago Automobile Trade Association as the basis of taxation. In discussion of the tax, Congressman Treadway explained that the yearly tax will not apply to an automobile owned by an individual and left in the garage unused during the entire year because the bill specifies that the tax will be collected on the use of automobiles.

Congressman Ellsworth stated that a number of dealers in used cars complained that under the horsepower tax a \$200 machine will pay the same tax as a \$5000 one. Congressman Kitchen explained that while the machine is in the hands of the dealers for repairs, equipment or resale it is not subject to the tax, but as soon as it is purchased by

## M. A. M. A. to Name a War Help Committee

**Will Ask for Hearing Before War  
Board to Learn How Parts Makers  
Can Best Serve Country**

NEW YORK, Sept. 23—At a meeting of the Motor & Accessory Manufacturers' Association Friday it was voted that President C. W. Stiger should appoint a War Service Committee and that this committee should request of the War Industries Board a hearing on the affairs of the parts makers.

The parts makers were included in the industrial committee which operated in Washington at the beginning of the war, but since the committee was reorganized some time ago have not had an official representation for contact with governmental agencies.

The association is sending to members and other parts and equipment makers a statement as to the detail of how the automobile and truck industries are being handled by the War Industries Board, including priority plans and other matters.

The directors also endorsed the action of the N. A. C. C. in declaring for a discontinuance of shows during the war.

### M.A.M.A. Members on Grid for Pier Show

NEW YORK, Sept. 23—Six members of the Motor & Accessory Manufacturers' Association will be asked to appear before the October meeting of the directors to explain how they happened to be in the Automotive and Accessories Exposition on the Municipal Pier in Chicago this month. The affair was not sanctioned by the association.

an individual for his use and is used he will have to pay the license tax and not the sales tax. It was also explained that if automobiles changed hands four or five times in the course of the year, each new user would have to pay the yearly license tax.

### M. T. C. Wants Instructors

WASHINGTON, Sept. 23—The Motor Transport Corps needs the services of at least 200 men qualified to act as instructors in its training school. Men of mature age who are either lawyers or teachers are requested to apply. Candidates will be given intensive training for two months, with opportunities to secure commissions. Men versed in mechanical lines are preferred, but this knowledge is not necessary.

Men who feel they can meet the qualifications and who desire to join the corps should communicate with the Chief of the Motor Transport Corps, 7th and B Streets, Washington, D. C. Minor physical defects will be overlooked in men qualified mentally.



*THE FARMERETTE DIVISION in the tractor parade was a feature. It is made up of girls from different schools and cities who are engaged in the study of modern agriculture. This is serious business with them and not a fad*

## Tractors at New York State Fair Boost Business in Empire State

*Farm Machinery Exhibit Bigger and Better Than Ever and Thousands Saw the Tractors Plow and Do Other Work—State Behind Movement*

**T**HE New York State Fair at Syracuse this year had its largest farm machinery show in the history of the institution and the tractors contributed largely to the exhibit.

As the result of a far-sighted state policy, it was possible to conduct three well-regulated demonstrations, and the manufacturers of twenty-two different types of tractors availed themselves of the opportunity for these practical tests before great crowds of farmers.

On Thursday, when Governor Charles

S. Whitman climbed upon a tractor seat and gave the starting signal, there were upwards of 10,000 spectators of the scene.

New York State, by the action of the State Fair Commission, has given the tractor the important place in agriculture to which it would seem to be entitled. The state takes the position that the tractor must be looked to for the solution of two great problems in agriculture growing out of the shortage in draft horses and the scarcity of labor.

It believes that the farmers of New York are entitled to know which types of tractors best suit their particular needs, and the big demonstrations were staged under the direction of F. G. Behrends, Superintendent of Farm Machinery, of the State Food Commission.

### Plowed 60 Acres

Approximately sixty acres were used for the three demonstrations, areas as nearly alike in character and size as possible being allotted to the different ma-



*TRACTORS, TRUCKS AND CARS were included in the automotive display at the New York State Fair. The exposition was housed in tents, bearing the names of the Syracuse dealers, and was one of the main attractions at the fair*



chines. The state reserved the right to fill and seal the fuel tanks of the machines, the state paying for the fuel, and the operators were required to recognize the commission's signal for starting. No further effort was made in the direction of a competition, the spectators being allowed to exercise their own judgment as to the merits of the various machines.

The State Fair Commission feels that it has accomplished much in the direction of getting more tractors on the farms of the state. This opinion is based on the number of people who witnessed the demonstrations, the evident interest and the reports of the agents of the tractors. The representatives of the manufacturers all agreed at the close of the fair that it was the largest and in every respect the most successful tractor show in which they had participated.

They expressed the view that the lead of New York State in providing this new feature would be followed by many other states another year. They gave assurances that they would be back to Syracuse in 1919 with larger exhibits under canvas and more tractors in the field.

The companies or agents which exhibited and participated in the demonstrations follow:

International Harvester Co.  
Maxim Munitions Corp.  
J. I. Case T. M. Co.  
The Chase Co.  
John Deere Plow Co.  
Emerson-Brantingham Co.  
M. Maloney Co.  
New York Moline Plow Co.  
Thomas J. Northway.  
J. B. Norton Co.  
National Tractor Co.  
Slocum-Hanna Co.  
Frick Co.  
Mutual Motor Car Co.  
Hueber Mfg. Co.  
G-L. Motor Co.

The State Fair Commission recognized also the increased demand for motor trucks on the farms, and as the result of a special drive among manufacturers



*"HOLD YOUR TICKET in your right hand and don't crowd." This is the Soldiers and Sailors arch at the main entrance*

drawing attention to this feature of the exhibition the number of motor truck exhibits was greater than in any other year.

The following is the list of those firms who exhibited passenger cars and trucks:

Brockway Motor Truck Co.  
J. I. Case T. M. Co.  
Central New York Motor Co.  
Croly Sales Co.  
G. L. Motor Corp.  
C. F. Gilmour Co.  
International Harvester Co.  
King Sales Co.  
Larrabee-Deyo Motor Co.  
Maxim Munitions Corp.  
Motor Truck Sales & Service Co.  
McCord Mfg. Co.  
J. Ward Neal, Inc.  
Overland-Syracuse Co.  
Fred J. O'Neil.  
Paddock Motor Sales Co.  
Slocum-Hanna Co.  
Syracuse Motor Car Co.  
Stowell Motor Car Co.

Only those dealers that have a large New York State territory exhibited cars at the fair, for the reason that where

the distributor only has Onondaga County the majority of his time is spent in doing missionary work to the thousands of visitors outside of his territory.

ST. LOUIS, Sept. 23—Motor World asked Frank J. Reifling, of the Reifling-Vigar Motor Co., what that company was going to do to keep things going. It is a Ford agency and Mr. Reifling is a very busy business man with a number of enterprises besides that of selling Fords. Here is his answer:

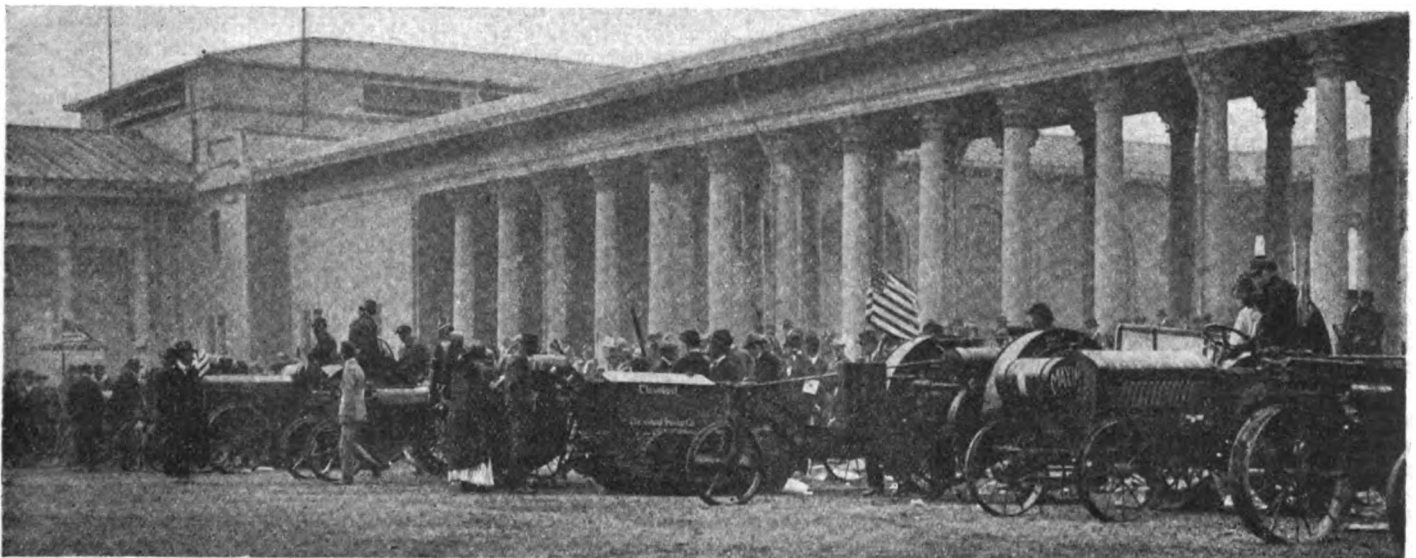
"If we can't sell Ford passenger cars we probably can sell trucks.

"If we can't sell trucks we probably can sell used automobiles.

"If we can't sell used automobiles we probably can extend the service business.

"If we can't extend the service business we probably can store and care for cars.

"If we can't store cars I know we can put in more machinery and do some light manufacturing for the Government. We are going to keep our plant busy, you can bet on that."



*FINAL INSPECTION of the tractors was made in front of one of the big pillared buildings, just before the little gasoline and kerosene horses went over back of the race track and plowed up a field that had a sheep-skin sod and was a poser for some of the operators—but they all did it*

## Business Fairly Good But Crowd Poor Is Verdict of Chicago's Municipal Pier Exposition

Some of the Exhibitors Found Good Business—Truck Exhibitors  
Not Pleased with Result—Unheated Building and Lack of  
Big Advertising Helped to Decrease Attendance

CHICAGO, Sept. 23—A fair success from a standpoint of accessory business and a failure from a standpoint of general attendance and from truck and tractor business is the only conclusion that can be reached regarding the second annual exposition of the Automobile & Accessories Exposition, Inc., which closed Saturday night after a run of a week at the Municipal Pier. A large proportion of the accessory exhibitors expressed themselves as being quite satisfied with the business results obtained. Many of them found a better business than they anticipated.

This seeming anomaly of good business for many of the accessory dealers, combined with a discouragingly small attendance, comes about through the fact that the show was staged expressly for jobbers and dealers and set at a time when the jobbers and dealers are closing up their accessory lines for the coming season. Inasmuch as there were not many people there who were solely sightseers, the lack of a crowd made it possible for those who came there direct for business to make their inspection of the different lines and conduct their negotiations without the jam of people with which we are accustomed to find the aisles crowded at the national shows.

### One Man Sold a Truck

The few truck and tractor manufacturers who exhibited were almost unanimous in using the words "A frost" as descriptive of the show, this referring both to the temperature and to the show from a business standpoint. The one truck exhibitor who sold a truck at the show said the sale was the result of a lead he had gotten outside and that the prospect came in at his telephoned request, although the opportunity of showing the truck at the Pier to the prospect permitted him to close the deal.

Foot Bros., exhibiting a planetary transmission for tractors, were the only people in the truck and tractor business that found the show worth while. They said the show gave them an opportunity to get some good factory prospects that they might not have gotten otherwise.

Opinions among the accessory exhibitors are divided. Those who exhibited with general publicity as one of the principal reasons were sadly disappointed, because the public was not on hand. Most of those whose whole aim was to interest dealers and jobbers and who had attractive lines found business good.

At that, the Pier did not see as many jobbers and dealers as was expected. The Threshermen's convention and the hard-

ware trade convention, which were to form the two big days, did not bring either the popular or trade attendance that was expected.

No definite figures as to either the popular or dealer attendance are yet available. On Thursday, with only three days of the show left to run, Manager Buelow started a dealers' register, and estimates that he got about 500 dealer registrations during the remaining three days. An estimate of the attendance by the management is 12 to 15 per cent less than the attendance at the Ford Accessory Show at the Coliseum last year, the predecessor of the present exposition. However, the actual gate receipts, including admission and the 10-cent war tax on such of the 250,000 free tickets distributed as were used, totaled more than the gate receipts of last year. The admission this year was 50 cents.

### Why There Was Apathy

The reasons for the apathy of the public regarding the exhibition may be summed up in the following: Lack of local advertising, unusually cold weather, imminence of the Fourth Liberty Loan, the popular feeling that motoring may be further restricted, and the fact that the show-going public is not used to going to the Pier for an exhibition.

The cold weather, combined with the fact that those who were acquainted with it knew there was no means of heating the pier, which is actually a mile out in the lake, kept the curiosity seekers away. Local advertising was confined to the daily newspapers, little, if any, use being made of billboards or window cards. These means of advertising have always been a feature of national shows and the public at large was not impressed by the newspaper advertising alone.

It is possible that there would have been a larger trade attendance had the National Association of Automobile Accessory Jobbers called off its convention a week earlier, but those jobbers who could not make two trips to Chicago and planned to attend the N. A. A. J. meeting did not receive their notification in time to take advantage of the Pier show. Another contributing factor was the attitude of the National Automobile Chamber of Commerce regarding shows in general and this one in particular, and a similar attitude on the part of the local motor trade association.

Manager Buelow and those whom he represents express themselves as being satisfied with the results when conditions are considered. Buelow makes the statement that a show will be held next year,

but also definitely states that it will not be at the Municipal Pier.

As space for a show of this nature the Municipal Pier is ideal. The two parallel halls on the second floor each provide a space 68 ft. wide and 2400 ft. long, room enough to house any display that was ever attempted in the Coliseum and its overflow buildings. Each of these could be divided into two aisles, as was done with the portion used last week, with four rows of exhibits. Trolley cars and buses afford sufficient transportation, while there is parking space for hundreds of cars between the two buildings.

There are, however, a number of things needed before this location can be available, as was brought out by the exhibition just closed. There is needed, first, some means of heating; secondly, freight elevators must be installed, to get the exhibits to and from the second floor. This year the trolley tracks were used, but not very successfully.

Some of the concerns which reported good business during the week were the Perfex Radiator Co., which lined up some good jobbers' business; Gray-Heath, which, among other contracts, sold 800 sets of roller bearings and 10,000 piston rings to one jobber from the East; Essenkay Tire Filler, which reports good dealer business and some local retail business; New Era Spring & Specialty Co., which is particularly pleased over good Canadian contracts; Morand Bros., manufacturing the Martin Cushion Wheel, who report a fine lot of orders and more good prospects; Findeisen & Kropf, who found special interest in the new Rayfield carburetor; the Splittorf Magneto, who found business fair, getting some new dealers; Hardy Co., showing the Bailey differential, who report good prospects lined up.

### Overland Gets Moline Plow Co.

TOLEDO, Sept. 23—The Willys-Overland Co. has obtained control of the Moline Plow Co., Moline, Ill., which manufactures the Moline-Universal tractor and an extensive line of other farm implements. The acquisition of this company places the Overland company in a position where it will be able to supply its dealers not only with passenger cars and trucks, but with tractors and farm implements as well, while it is fairly well known that the Overland interests also are heavily interested in the Curtiss company, thus making the automotive field complete insofar as Overland is concerned.

The basis upon which the control of the Moline company was obtained has not been permitted to become public, nor has anything been said regarding the probable merchandising policies to follow the deal. Willys, however, has stated that he intends to keep the Moline personnell practically intact and that vice-president and general manager F. O. Allen would become president and general manager. The Moline company at present has plants in Moline, Chicago, Rock Island, Freeport, Ill., Stoughton, Wis., Minneapolis and Poughkeepsie N. Y.

## Truck Makers Protest Curtailment Orders

**State Plan Will Only Help Those  
Having No War Work—Held  
to Be Unjust**

WASHINGTON, Sept. 21—Numerous individual protests are reaching here because of the recent War Industries Board decision which limits motor truck production for the last half of 1918 to 33 1/3 per cent of the total production of the 18 months preceding that period. In fact a mass protest meeting is being considered by truck and parts manufacturers who have arrived here in numbers.

This ruling, it is said, works only to the benefit of truck makers engaged profitably in war work and who are thus assured that while they are prosperously occupied their competitors will not increase their commercial business.

A number of unjust results are reported by the truck makers who object to the ruling. They cite the instance of the manufacturer who has only been in the truck making business for the last year or the last year and a half, and who, under this ruling, would be allowed only a very small amount of trucks at this time. Again there is a manufacturer who was unable to secure his materials because of the many difficulties during the last winter, and consequently had to cut down his production. He now has the materials after much expenditure of effort and money, and also has the orders, but owing to the ruling, is limited in his output.

This ruling came as a great surprise to the general industry. Following all of the previous declarations of the War Industries Board affirming the essentialness of the motor truck, it has been difficult to understand the exact reason for this latest move. Inquiry at the Automotive Section of the Board developed two possible reasons: (1) It was said that the motor truck is not, outside of war work, declared essential by the War Industries Board.

(2) It was stated that patriotic manufacturers engaged in truck work for the Government should be protected during the war against manufacturers building trucks for commercial purposes.

The latter reason scarcely deserves consideration. It is hardly believed that this was stated seriously. It is well known that all of the truck manufacturers have been anxious to secure Government work, and have patriotically, and for excellent business reasons, endeavored to secure war contracts. Also, it is a question whether it is within the function of the War Industries Board to control general industrial and commercial business for the sole reason of "protecting" war manufacturers.

The first assertion that motor trucks for commercial or industrial purposes had not been declared essential by the War Industries Board is a surprise. As early as June 26 the War Industries Board stated in a letter signed by the Vice Chairman of the Priorities Committee:

"We beg to advise that the Priorities Committee views the motor truck in most instances as being a helpful medium, particularly at this time, and are not disposed to hamper the production of same."

Later, on Aug. 8, the War Industries Board issued Circular No. 11, stating:

"Careful consideration has been given to the several problems, and a decision reached that motor trucks, in so far as they are used directly or indirectly for war purposes, are war essentials, and that their production for such purposes must be facilitated; and further that in so far as motor trucks are employed in civilian industries for essential uses they constitute an important transportation medium, and any curtailment of such uses should be avoided as far as practicable."

As was shown in meetings previous to the issuance of this circular, more than 80 per cent of the truck consumers in this country are engaged in what can be called direct or indirect war work, or essential civilian industries. Consequently, the raising of this question of the essentialness of the motor truck by the War Industries Board at this time seems unreasonable to the truck makers. They declare that the essentialness of the truck has been proved and accepted by the War Industries Board.

C. C. Hanch, chief of the Automotive Products Section, stated yesterday that he has been given latitude by the War Industries Board, which will allow him to enlarge or decrease the apportionments for production for truck makers during the last half of 1918. By this means he expects to give aid to the truck makers who have only been in business a short time, and also to make reasonable adjustments to those manufacturers who believe that their apportionments under the original ruling of one-third of the last 18 months, business would be unfair. Truck manufacturers are hoping that through Mr. Hanch's efforts a reasonable adjustment can be effected.

## Two Chicago Distributors Take Tractors

CHICAGO, Sept. 23—Two of Chicago's big motor car selling organizations have taken on tractors and are preparing to put their tractor business into the hands of the motor car dealers of the West.

The Mitchell Automobile Co., distributors for the Mitchell, has taken on the Farmer Boy tractor, made by the Columbus Tractor Co., Columbus, Ohio, for Illinois, Wisconsin, Michigan and northern Indiana.

The Marmon-Chicago Co., distributor of the Marmon and Hupmobile, has taken on the Parrett tractor for northern Illinois, eastern Iowa and southern Wisconsin. The Rue Motor Co., distributor of the Ford, has been handling the Fordson in a considerable proportion of Illinois for some time.

The Mitchell Automobile Co. has about 100 car dealers, and as far as possible all of these dealers will be put into the tractor and plow trade, as the company is planning to make arrangements for a plow which will be sold as a unit with the tractor. The distribution of tractors in this territory will be confined strictly to automobile dealers, as where the local dealer of the company finds it inexpedient to engage in the business, some other motor car dealer in the same town will be secured. This already has happened in several instances. Inasmuch as the dealers in the Mitchell organization sold something like 2000 cars last year, their general character as business getters is evident.

In the territory which the Chicago Marmon Co. will cover on the Parrett tractor there are about 40 dealers who

## Limit Iron and Steel for Tractors by 25%

**War Industries Board to Give  
Makers Only 75 per Cent During  
the Year Ending Oct. 1, 1919**

CHICAGO, Sept. 20—The quantity of pig iron and steel which manufacturers of tractors and other farm implements may use in the year commencing Oct. 1, 1918, and ending Oct. 1, 1919, has been limited to 75 per cent of the quantity used in the year ending Oct. 1, 1918. This action has been taken by the War Industries Board following conferences which were held last week in Washington between the War Service Committee of manufacturers of agricultural implements and farm operating equipment and Priorities Division of the War Industries Board.

Although this limitation of iron and steel will mean curtailment in the production of tractors to some extent, it is not possible to state at the present just how much the curtailment will amount to. The War Industries Board has not specifically limited the production of tractors and other implements to 75 per cent of the production during the year ending Oct. 1, 1918; instead it has merely limited the quantity of iron and steel which manufacturers of these implements may use. It is estimated that this action will release 500,000 tons of iron and steel.

In its circular to the trade, the Farm Implements Committee, of which C. S. Brantingham is chairman, states that "possibly some relief may be obtained by substantial reduction of inventories by the end of the year Oct. 1, 1919" and adds "that it becomes the obligation of the manufacturer to adjust himself in the way that will serve his trade and the farmer best out of the materials allotted him."

The War Industries Board urges that a full assortment and stock of repair parts be supplied to the farmer as a means to assist and encourage him to continue to use the equipment he now owns.

have been handling the Marmon, and these will be put into the tractor business. No agencies will be placed by the company outside of the present organization, and where it is impossible for a local dealer to take on the line his immediate territory will be added to that of the nearest dealer. Dealers in the organization also will be put in line with equipment and will be in a position to supply the farmer with the necessary plows, etc., to use with his tractor.

It is reported that several other automobile distributors are considering going into the tractor business, although arrangements have not reached the stage where announcement can be made. The indications are that within a short time a considerable number of the leading automobile distributors in Chicago will be actively engaged in selling tractors and equipment.

# Gasoline Situation Not Critical

*Heavy Drafts on Stocks Through Winter Likely for War Work  
—Voluntary Conservation Desirable*

WASHINGTON, Sept. 21—The gasoline situation is serious not so much because of a present shortage as because of forthcoming shortages early next year.

There is a serious discrepancy between gasoline production and consumption at present, but this is not critical, as the motoring season is practically at an end and the stocks of gasoline will from this time on increase. However, it is impossible to forecast the future, and it is probable that heavy drafts on the stocks of gasoline for war purposes both at home and abroad, during the winter and spring, will prevent the usual large stocks that accumulate through the winter and thus create a vital gasoline shortage for 1919.

For this reason voluntary conservation must be practised constantly and every step must be taken not only to conserve gasoline but to increase the future supply and the supply of crude oil. These are the salients of a report submitted by Van H. Manning, Director of the Bureau of Mines, Department of Interior, to the Senate, as a result of a resolution presented by Senator Lodge.

Figures were presented in the report showing that the monthly consumption, including exports, for August amounted to 9,500,000 barrels as compared with a monthly production of 8,000,000 barrels, creating a shortage of 1,500,000 barrels per month comparing the demand with the production. Herewith are the tables and the major part of Director Manning's statement.

These figures, stated Director Manning, show gasoline consumption to be seasonal, with the greatest demand in the summer, with the demand decreasing in the winter as the storage stocks increase. During the summer of 1917 storage was at a minimum and reached its maximum in March, 1918. At present gasoline stocks are falling off because the entire output of the refineries is not enough to meet the increasing demand. August is expected to show the same demand as July, so that the stocks at the end of August, 1918, will probably be between 6,000,000 and 7,000,000 barrels. September will witness the culmination of that period of greatest consumption and close the heavy drafts on stocks unless exports increase at a greater rate than is now expected.

"In normal times," continues the report, "such a discrepancy between production and consumption during the summer months would cause no undue consternation for sufficient gasoline would be stored during the winter months to more than overbalance the heavy summer demand. At present, however, conditions are abnormal and it is difficult to forecast the future.

"The domestic demand for gasoline during the coming winter will probably

be reduced by a falling off in automobile production and the necessity for economy among the people. On the other hand, our war demand for gasoline both at home and abroad will probably be tremendous, especially with the advent of spring, so that the situation is really serious, but not so much because of present shortage as because of the forthcoming shortage of next year.

"We are not now producing enough crude oil to supply refineries, gasoline stocks have been reduced to a 2 weeks' or 3 weeks' supply, and although the present situation has been well taken care of by the Fuel Administration we are facing a tremendous demand next spring, and a demand as inflexible as it is great, for we must have adequate supplies of gasoline for our overseas forces and for those of our Allies. The need for conservation is apparent, and the American people should voluntarily forego the pleasure of needless automobile touring during these times. Such voluntary conservation may now prevent the necessity of more serious action later. Furthermore, every step should be taken by the people and their representatives not only to conserve our present supply

of gasoline but also, if possible, to increase our future supply and the supply of crude oil from which gasoline is made."

## Canadian Prices to Rise 10 Per Cent

VANCOUVER, B. C., Sept. 20—An increase of at least ten per cent in the price of automobiles can be looked for in a very short time, according to the heads of several local automobile concerns. More than one head office has notified its branches to this effect and it is expected that the increase will affect all the popular makes of cars. Shortage of cars, scarcity of labor and the bending of the efforts of many companies toward the filling of war contracts are given as the chief reasons for the increase.

## Probably No Coast Show

LOS ANGELES, Sept. 21—There is little probability of a motor vehicle show in Los Angeles this year. It has been the custom to hold the annual show in October or November and the middle of September heretofore always has seen preparations well under way. It is understood the subject has not been presented to the Motor Car Dealers' Association, which sponsors the shows and the general understanding among dealers is that an event of this kind this year is not needed.

## Production and Consumption of Gasoline

Increase in crude oil consumption by refineries:	
Daily average 1917.....	863,374 bbl.
Daily average first 7 months 1918.....	874,964 bbl.
Increase.....	11,590 bbl.
Daily average increase for July, 1918.....	940,991 bbl.
Increase over July, 1917.....	77,617 bbl.

## CHANGES IN STOCKS OF THE PRINCIPAL REFINED PRODUCTS EXCEPT GASOLINE FROM JAN. 1, 1918, TO AUG. 1, 1918

Kerosene .....	127,744 bbl. decrease
Gas and fuel oils.....	737,882 bbl. decrease
Lubricating oils .....	171,878 bbl. decrease
Paraffine wax .....	21,790,190 lb. increase

## APPROXIMATE PRODUCTION, CONSUMPTION AND STOCKS OF GASOLINE FOR THE FIRST 8 MONTHS OF 1918

Months	(b) Production, Bbl.	(c) Stocks at End of Month, Bbl.	(d) Decrease or Increase for Month, Bbl.	(e) Average Daily Increase or Decrease in Stocks, Bbl.	(f) Total Con- sumption, Including Exports	
December, 1917		9,815,000				
January, 1918	5,580,000	11,160,000	+	1,345,000	+	4,235,000
February	5,370,000	12,350,000	+	1,190,000	+	4,180,000
March	6,410,000	12,550,000	+	200,000	+	6,210,000
April	6,990,000	12,120,000	—	430,000	—	7,420,000
May	7,600,000	10,950,000	—	1,020,000	—	8,620,000
June	7,500,000	9,960,000	—	990,000	—	8,490,000
July	7,900,000	8,330,000	—	1,630,000	—	9,530,000
August	8,000,000	6,830,000	—	1,500,000	—	9,500,000

The month of August as shown in the above figures was an estimate as the figures from the refineries are not yet available.

Column (d) shows an excess of production over consumption, or in other words, amounts that had to be taken from storage to meet the demand.

Column (e) shows that during July the average daily gasoline shortage was 52,600 bbl.



## Gasless Sunday Helps To Sell Accessories

### Garages Full of Owners Tinkering Their Cars—And Garagemen Rather Like It

NEW YORK, Sept. 23—New York City and environs were gasless again yesterday. Even fewer cars were running than on the three previous gasless Sundays, practically the only cars running being those of physicians and some official vehicles.

Several garages that were visited by a Motor World man were as busy as beehives on Sunday morning. Motorists apparently have taken to tinkering their cars instead of driving them. And the garagemen are altogether pleased with the change.

They state that the loss from the sale of gasoline is more than made by the profit on accessories, oil, grease, etc., that are sold.

Generally, when John Jones starts to tighten up the bolts on his flivver, he finds in the course of his experiments that he needs sundry supplies—radiator hose, spark plugs, fan belts, grease, grease cups, bits of wire and springs to kill some of the rattles, and a lot of other things that bring the garageman a profit. One garageman in Brooklyn is selling quite a lot of brake lining.

### No Gasless Sundays for Liberty Loan Work

WASHINGTON, Sept. 21—The use of automobiles on Sundays for promoting the Liberty Loan campaign, which begins Sept. 28, is regarded by the United States Fuel Administration as entirely within the spirit of the Sunday gasoline saving request.

### Canada Asks Gasoline Cards Instead of Gasless Sundays

MONTREAL, Sept. 23—The Montreal Automobile Association, through Secretary Thomas C. Kirby, has petitioned the authorities at Ottawa for the issuance of gasoline cards to car owners instead of the establishment of regulations which forbid the use of cars on Sunday. The petition is covered by the following statement:

"Because of the great number of people who are able to use their passenger cars only on Sunday, the present regulation is manifestly unfair in that a large number of these people are deprived of the use of their passenger cars on the only day in the week upon which they can avail themselves of the use of their car; that a more reasonable regulation would seem to be in the form of gasoline cards to all automobile owners so that they could feel free to use a certain amount of gasoline on any day or days in the week upon which they would find it most convenient to do so. Furthermore, that the present regulation

is also unfair because it discriminates against the use of passenger cars, with the sole object of conserving gasoline, but allows the free use of cars on every week day, consequently the issuing of gasoline cards will prevent any unnecessary driving of any kind. But in the meantime you are urgently requested to very strictly observe the standing order of *non-Sunday passenger driving*, and the request stands *not to use automobiles for passenger driving on Sunday* until further notice."

## And Now the Jobbers Call Off Convention

### Neither Exhibit Nor Fall Meeting Will Be Held—Request of War Board Prompts the Action

#### WILL HELP CONSERVE RAILROAD CAPACITY

CHICAGO, Sept. 20—The convention of the National Association of Automobile Accessory Jobbers, to have been held Oct. 28-Nov. 2, has been called off. The business exhibit, which was to have been held at the same time, had previously been cancelled at the request of the War Industries Board.

It was held by the Board that the exhibit and convention would necessitate the traveling of hundreds of people considerable distances at a time when an effort is being made to increase the carrying capacities of the railroads and that the jobbers would confer a benefit by skipping at least this session. The exhibit was dropped several days ago, and then the directors voted on the convention matter and decided to dispense with that also.

#### Oils and Gasoline Licensed

WASHINGTON, Sept. 21—Importers, manufacturers, distributors and transporters of crude oil, fuel oil, gas oil, kerosene or gasoline whose annual businesses exceeds \$100,000 will be required to operate under a license on and after Oct. 1, 1918, according to a proclamation issued to-day by President Wilson. The licenses can be secured from the United States Fuel Administration, Oil Division, Washington, D. C. Special blank forms will be provided by the Fuel Administration for that purpose. Holders of existing licenses already issued by the United States Fuel Administration are not required to secure new licenses.

#### N. A. D. A. Adds 200 Members

ST. LOUIS, Sept. 23—Last week 200 members were added to the N. A. D. A. rolls. Of these, 110 were the result of President Vesper's talk before the Wisconsin meeting of motor car dealers. Fifty more dealers signed applications at that meeting, but their checks have not been reported as yet.

## Draft Rule Worrying Passenger Car Labor

### Employees Seek Ruling Regarding Essentiality of Work—Chalmers Takes It Up

WASHINGTON, Sept. 21—Following the recent draft registration many passenger car factory employees hastened to leave this industry for others more directly termed war work, and to prevent disaster to the industry Hugh Chalmers, representing the manufacturers, has been in Washington this week taking up this matter.

He attempted to have the passenger car placed on the preference list, at least until the end of the year. For various reasons the War Industries Board decided against this. It was, however, explained that the preference list is no absolute guide to the District Boards, which have complete power to decide individual cases and the status of individual industries. It was further stated that the preference list does not guide the "work or fight" order but is merely used to determine deferred classification for occupational reasons. In other words the men entitled to deferred classification because of reasons other than occupational will not be drafted under the "work or fight" rule unless they enter under the five classes which Provost Marshal General Crowder named last spring and which included such occupations as clerks in mercantile establishments, persons engaged in sports, etc.

#### Test American Caproni

NEW YORK, Sept. 21—The first American-built Caproni bombing plane equipped with Liberty engines was tested at Mineola to-day, and according to reports, gave an excellent account of itself. The machine is equipped with three Liberty engines, one on each side of the pilot's seat and one at the rear. In addition to the pilot, it carries two observers and about a ton of bombs. In the flight to-day about 1900 lb. of ballast was carried. The flights were witnessed by more than 500 aviation students from the Princeton ground school. The demonstration included flights of the standard training planes, De Havillands and a new type of speedy battle plane of which no particulars have been permitted to become public. The Caproni was piloted by Capt. D'Annunzio. The machine is capable of 105 m.p.h. and in its tests climbed to 14,000 ft. in 35½ minutes.

#### Discuss Used Truck Matters

ST. LOUIS, Sept. 23—The Commercial Car and Service Association will discuss the meaning of the sales pledge with reference to accepting old trucks on new sales at the weekly meeting. All of the branch managers here for large companies are accepting the interpretation that they cannot accept the old trucks. Many small dealers are still bidding frantically for used trucks.

## Prominent Tradesmen Assume New Duties

### Resignations and Promotions Place Workers in New Places

George Fritz, Jr., son of the field secretary of the jobbers' association, has entered the naval service and is at the Pelham Bay, N. Y., training station. He has relinquished his business as eastern representative of the Motor Specialties Co., Waltham, Foster Bros. Mfg. Co., Utica, and Tyler Mfg. Co., Boston, which he operated at 1790 Broadway, New York.

S. A. Campbell, formerly sales manager of the Warnola Mfg. Co., New York, is now associated with the Bay State Pump Co., Boston.

C. L. Fox, assistant sales manager of the Saxon Motor Car Co., will leave next week for Jacksonville, Fla., where he will go into training in the Motor Transport Corps.

W. H. Miller, for a number of years assistant manager of the South Bend branch of the Studebaker Corp., has resigned to accept the position of district representative for the Garford Motor Truck Co., with headquarters at Kansas City.

J. L. Hibbard has been appointed foreign sales manager of the Cleveland Tractor Co., Cleveland. For the past 8 years he has been associated with the Studebaker Corp. in its sales department and for the past 5 years in charge of its foreign sales.

W. G. Thorman, Cincinnati manager of the C. & D. Auto Supply Co., has been called to the colors and is now in training at Camp Sherman. His place has been taken by E. N. Stearns, who has been his assistant.

Burt Rattenberg, late of the Jordan organization, Cincinnati, has received a commission in the Motor Transportation Division of the Federal army after 6 weeks' special training in a Southern camp and will go to Europe for service.

L. F. Collins, Madison, Wis., has been made salesmanager of the motor truck department of the Nash Motors Co., Kenosha. He succeeds H. C. Hart, who resigned recently to accept a commission as captain in the Ordnance Department of the army.

Lafayette Markle has resigned as vice-president and assistant general salesmanager of the Republic Motor Truck Co., Inc., Alma, Michigan, that his time may be devoted to the active operations of his interests in Chicago, the L. Markle Co. and the Chicago-Republic Truck Co.

John L. Steele, manager of the Autocar branch in St. Louis, has been transferred to an Eastern branch. He is succeeded by J. H. Mack, of Chicago.

George C. Brinkman, formerly executive of several motor dealing companies in St. Louis, has organized the Servis Specialty Mfg. Co. to put on the market a safety crank of his invention.

R. L. Johnstone, manager of the parts department of the Hudson-Phillips Motor Car Co., St. Louis, has gone into training for a commission in the Ordnance department.

G. C. Fischer, manager of the Battery Service Station (Willard) in St. Louis, has entered the army motor division. C. E. Mouselle, traveler for the branch, succeeds him.

C. L. Fox, for 3½ yrs. assistant salesmanager of the Saxon Motor Car Corp., Detroit, has received an appointment to the officers' training camp at Jacksonville, Fla. He will report for duty about Oct. 1.

Ralph J. Handy, former distributor of the

Tonford truck attachments in Detroit, has been appointed salesmanager of the Lorton Truck Co., Youngstown, Ohio.

H. S. Ketcham, formerly New England district salesmanager for the Cleveland Tractor Co., has been appointed by the McCord Mfg. Co., Detroit, as district salesmanager for the Heath-Duplex folding delivery body. He will cover territory extending from Texas in the southwest to Florida in the southeast, and North Carolina in the northeast to Oklahoma in the northwest.

J. L. Hibbard, for 5 years associated with the Studebaker Corp. in its sales department, in charge of foreign sales, has been appointed foreign salesmanager of the Cleveland Tractor Co.

Stuart Webster, treasurer of the Racine Rubber Co., Racine, of which he was one of the founders, has been elected treasurer of the Ajax Rubber Co., Trenton, N. J., which owns and controls the Racine company. Webster is transferring his offices to the headquarters of the Ajax company in New York. H. L. McClaren, who retired as head of the Mitchell Motors Co., Racine, to become president of the Racine Rubber Co., is now president of the Ajax company. Webster has been a vice-president of the company, for the Western division, and retains this office.

## Factories Calling Dealer Conferences

### To Talk Over War Situation and Ascertain How the Dealer Can Best Get by Under Present Conditions

NEW YORK, Sept. 23—Some of the motor car factories are calling their dealers into conference at headquarters to talk over the best possible means by which dealers can get by if car production gets so low that the car sales income will not carry the present overhead.

The Studebaker dealers met last week in Detroit and the Franklin dealers will meet Wednesday of this week at Syracuse. At these meetings the position of the factory as regards production is made plain to the dealers and the latter discuss plans they have worked out for getting on a war basis.

### N. A. D. A. to Help Recruiting of Mechanics

ST. LOUIS, Sept. 23—The N. A. D. A. is going to assist the Y. M. C. A. in enlisting between 4000 and 5000 motor mechanics and drivers for service abroad. President Vesper enlisted in this movement last week after Charles E. Hill, director of the Overseas Motor Service of the National War Work Council, spent a day with him.

### Hutchins Heads Quincy Dealers

QUINCY, ILL., Sept. 23—At the annual meeting of the Quincy Automobile Dealers' Association T. R. Hutchins was elected president to succeed A. C. Dal-lach, who recently resigned. No other change in the officers was made. The meeting was addressed by Malcolm McKinnon, of Rockford, Ill., speaking in behalf of the proposed issue of \$60,000,000 for the construction of hard roads.

## Plan Kerosene Burner Test to Washington

### Preliminary Try-Out on Sheepshead Oct. 2 and Start of Road Run Probably Oct. 7

NEW YORK, Sept. 22—More than a score of manufacturers of kerosene-burning carbureters and attachments and other fuel saving devices gathered at the Automobile Club of America here this afternoon to discuss ways, means and plans for holding a demonstration which will bring to the attention of the authorities at Washington the possibility of operating passenger cars, trucks and tractors either on kerosene, some other distillate, or on a smaller quantity of gasoline than is now used.

In consequence, it was decided to hold a preliminary test, probably on the Speedway at Sheepshead Bay on Wednesday, Oct. 2. Entries for the test will close Sept. 26, and the entrance fee has been put at \$100. It is probable that the preliminary tests will take about 4 days and that a start on a road demonstration, probably to Washington and back, and certainly to cover at least 1000 miles, can be started Monday, Oct. 7.

It is likely that the test will be run under fuel economy rules of the American Automobile Association modified to suit the test, and that the whole run will be officially observed. The technical committee consists of Richard Kennerdell, chairman of the Contest Board of the A. A. A.; Ralph DePalma and Gregory Flynn. The plan is to have each entrant turn his entry over to the technical committee, equipped for burning gasoline in the usual manner. The car is to be tested and records made of the result. After this the entrant is to equip his car with the device under the supervision of the technical committee. The tests are being sponsored by the New York Herald. Those represented at the meeting were:

Derf Mfg. Co., New York; A. H. Gussman. New York; Charles H. Belknap Co., Brooklyn; W. E. Cubben, Cleveland; Miller Chemical Co., New York; Remington Mfg. Co., Philadelphia; Auto Appliance Co., Philadelphia; Rite-O-Way Mfg. Co., Philadelphia; E. & E. Carburetor Co., New York; Motor Fuel Saver Corp., New York; Bethel Rustic Work Co., Bethel, Conn.; Toquet Mfg. Co., Westport, Conn.; Griffin Carburetor Co., Paterson, N. J.; Reid Appliance Co., Detroit; Ortelg Motor Co., New York; Ingram Motor Corp., Newark, N. J.; Kerosene Equipment Co., Detroit; Edward A. Cassidy Co., New York; Econ-O-Kleen Fuel Co., Thief River Falls, Minn.; Sunderman Corp., Newburg, N. Y.; Kerosene Burning Carburetor Co., Chicago; Kerosene Motor Appliance Co., New York; Holley Carburetor Co., Detroit; W. P. Deppe, New York; T. B. Elker, New York.

ST. LOUIS, Sept. 23—The Vesper-Buick Auto Co. salesrooms have been accepted by the Fourth Liberty Loan Committee as a district office for the sale of the bonds in that district of the city.

## *With the Boosters on Their Outing*



*Charley Well's team of lightweights towed the team of heavy weights*



*As usual, the sack race included mostly spills—and a lot of fun*



*Bill Poertner bringing up supplies*



*And this is A. L. Newton just before he made the hit*



*—that brought in this run*



*It may not look like it, but this is the finish of the fat man's race*



*Hill, captain of the winning ball team*

NEW YORK, Sept. 17—Nearly 100 dealers, garagemen and supply men from New York and environs gathered at Fred Wagner's Smithtown (L. I.) farm to-day for the annual Big Village Motor Booster's Outing. The crowd that gathered was practically the same as in years gone by, with here and there a new face to remind one of those who are taking their places in the great war.

As usual there was a ball game, but not as usual, it went seven innings. It

was scheduled for five but it took seven for Hill's Staggers to beat Poertner's Nationals to the tune of 9 to 6. Not even a sprinkle of rain stopped them.

Nor could the rain put a damper on the other sports. E. B. Evans ran away with the 50-yard dash and Bracht won another for fat men. M. J. Sturm reversed himself and won a 50-yard backward race and then won the first heat of the sack race; in the final, Cahill beat him out. The tug-of-war brought a sur-

prise when Charley Well's team of lightweights towed the other team over the field.

A. L. Newton and Jo Judge won the wheelbarrow race quite handily and the crab race went to H. P. Baran. E. S. Miller won the low shoe race and the high show race went to E. V. Derks. C. F. Seiler won the tire rolling contest. But the best part of the whole day was the clambake that wound up the festivities.







### Michigan Transport Committee to Organize

DETROIT, Sept. 21—At a meeting of the Highway Transport Committee held in Lansing Sept. 10 it was decided to divide the state of Michigan into five districts for the purpose of more efficiently organizing the rural motor express lines of the state and establishing return loads bureaus. Each district will be represented by a chairman. J. A. Hanley, Traffic Manager of J. L. Hudson Co., has been appointed chairman of the southeastern district. Appointments for other districts have not been made.

This Michigan State Highway Transport Committee is acting directly under orders from the National Highway Transport Committee, which is organized as one of the branches of the National Council of Defense. The state committee will comprise an executive committee and the county and district committees will work under this executive committee.

The district highways transport committee will be composed of five members. In appointing these members it is suggested that all represent different counties and be selected from the five most important areas.

### Tractor Show for St. Louis

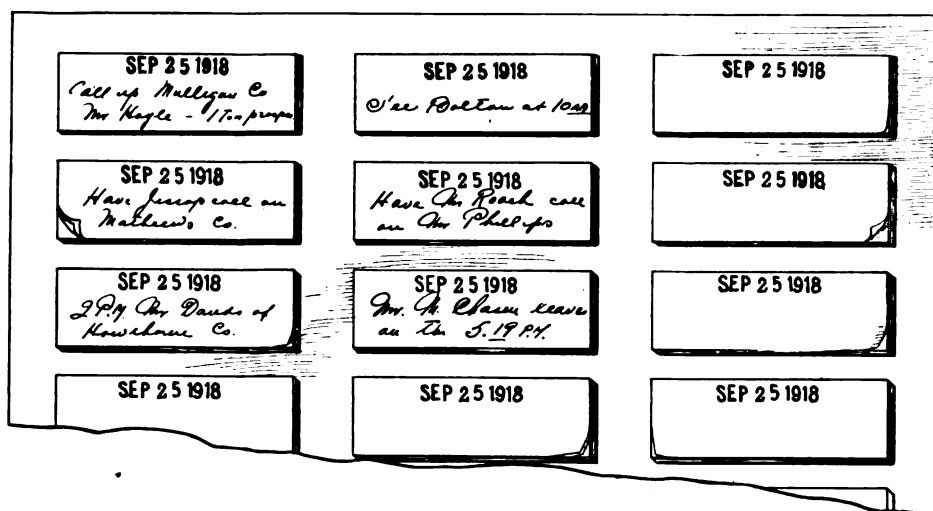
ST. LOUIS, Sept. 21—The Commercial Car and Service Bureau of the St. Louis Automobile Manufacturers' and Dealers' Association has named Robert E. Lee as manager of a truck and tractor show to be given here before cold weather. The committee in charge are: L. H. Amrine, Scudder Motor Truck Co.; H. C. Bailey, International Mack; W. E. Rehbein, Garford. If a suitable building cannot be obtained a tent will be erected.

The bureau has named a committee to discuss proper charges for garage charges on trucks. The bidding on used trucks was reported as an evil and all dealers were asked to check up bids reported by prospects as having been made by a competitor.

### Motor Transport Corps to Consist of 154,774 Men

WASHINGTON, Sept. 21—The Motor Transport Corps will eventually number 154,774 men. The army motor trucks with this corps will number 40,803. There will be 24,250 motorcycles, 7905 passenger cars, and 6598 ambulances with a total of 100,000 riders and drivers. There will be 4298 officers and 30,090 non-commissioned officers. The executive organization will comprise 3122 men and 679 officers and the total repair personnel in the 273 service parks which will be constructed for the upkeep of the vehicles will comprise 34,319 men, mostly trained mechanics.

Each additional American army will require a similar motor transport personnel and it is expected that by the time the United States has 4,000,000 troops in



By means of this device, consisting of a number of small pads, an executive can keep track of the numerous details he has to attend to during the day

France, 500,000 of them will be engaged in motor transport work. The Motor Transport Corps is operating 1500 trucks in convoy trains in this country exclusive of the trucks used at the various army posts. These 1500 trucks carry various kinds of merchandise and munitions for the army over an average of 100,000 miles every 24 hr. The Motor Transport Corps is desirous of securing a great number of men and officers, men especially qualified to drive motor vehicles by the thousand, and executives with business experience are wanted for officers. Men in the deferred classes of the first draft will be inducted into this service. Further information can be secured by addressing the chief of the Motor Transport Corps, Washington, D. C.

### A Handy Desk Reminder

A small and simple device for keeping the important things of the day where they can be easily seen consists of a number of small pads of paper fastened to a sheet of cardboard. Memos to call people up, prospect calls and any other details can be entered, and when the matter is attended to the slip can be torn off.

This device is used to good advantage by W. J. Aitken, Denby Eastern distributor, in his office at 200 Fifth Avenue, New York. It is particularly useful for an executive who has to keep track of a number of details. The pads can be bought at any stationery store and the backs pasted on a piece of cardboard of the required size.

## Coming Events

### Conventions

Chicago, Ill. ....	Convention.....	Oct. 23-Nov. 2
	National Association of Automobile Accessory Jobbers	
Akron, O. ....	Annual, Firestone Tire & Rubber Co.....	Dec. 5-6

### Tractor Demonstrations

Trenton, N. J. ....	Trenton Fair, Harry B. Salter, Supt.....	Sept. 30-Oct. 4
Washington, Ga. ....	Wilkes County .....	Oct. 1-5

### Expositions

Memphis, Tenn. ....	Tri-State Fair .....	Sept. 21-26
Oklahoma City, Okla. ....	State Fair .....	Sept. 21-28
Boise, Ida. ....	State Fair. J. C. Wooley.....	Sept. 23-28
	Moscow, Ida. ....	
Chattanooga, Tenn. ....	Eastern Tennessee District Fair.....	Sept. 30-Oct. 5
Birmingham, Ala. ....	State Fair .....	Oct. 1-12
Kansas City, Mo. ....	American Royal .....	Oct. 7-12
Richmond, Va. ....	State Fair .....	Oct. 7-14
Atlanta, Ga. ....	Eastern State Fair & Automotive Exhibition.....	Oct. 12-19
Dallas, Tex. ....	Seventh Annual Texas Automobile Show.....	Oct. 14-27
	Texas State Fair .....	
Macon, Ga. ....	State Fair .....	Oct. 30-Nov. 9
Shreveport, La. ....	State Fair .....	Oct. 23-Nov. 4

# Why You Should Be A Michelin Dealer

No.

18

## Better Winter Business —Prepare for it Now

The Michelin Universal, because of its broad traction-surface, is an ideal tire not only for rear wheels, but for front wheels, too. It gives maximum protection against skidding and yet steers so easily that it can be used with utmost satisfaction on front wheels, where other makers advocate the use of plain-tread tires or so-called "driving tires."

Especially in winter time motorists require all the protection they can get against skidding.

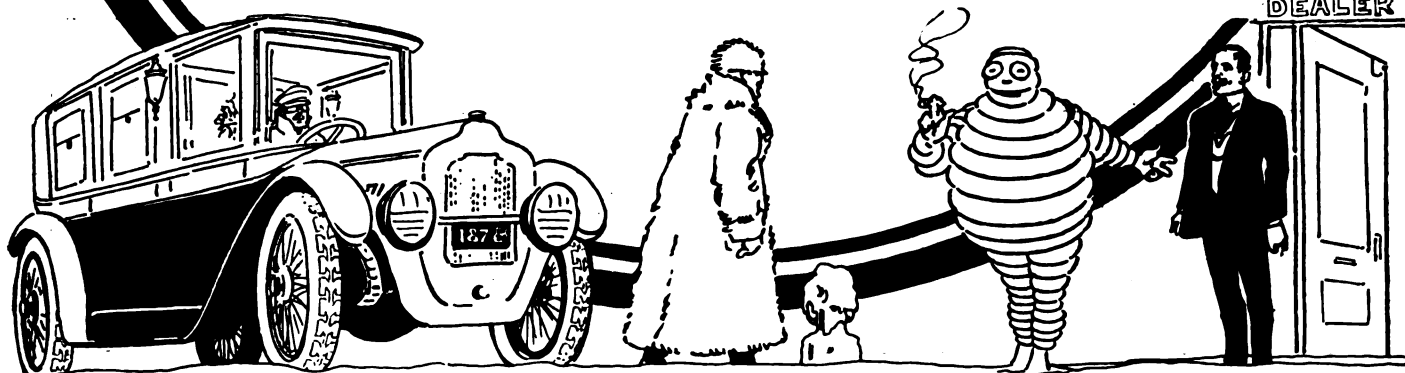
Hence Michelin Universals have an extra-ready sale in winter when the sale of ordinary tires falls off.

Michelin Dealers are busy the year round. Now is the time to prepare for winter business. If you want to make this the best winter you ever had, write for Michelin's dealer proposition today.

Michelin Tire Co., Milltown, N. J.



MICHELIN  
DEALER



# MICHELIN



# The BIG-SIX

*Beautiful in Design  
Thoroughly Modern  
Mechanically Right*

**B**ENEATH the impressive lines and perfect symmetry of the BIG-SIX is an ensemble of such substance, power, comfort and responsiveness as can only be attained as a result of designing and workmanship of the highest order.

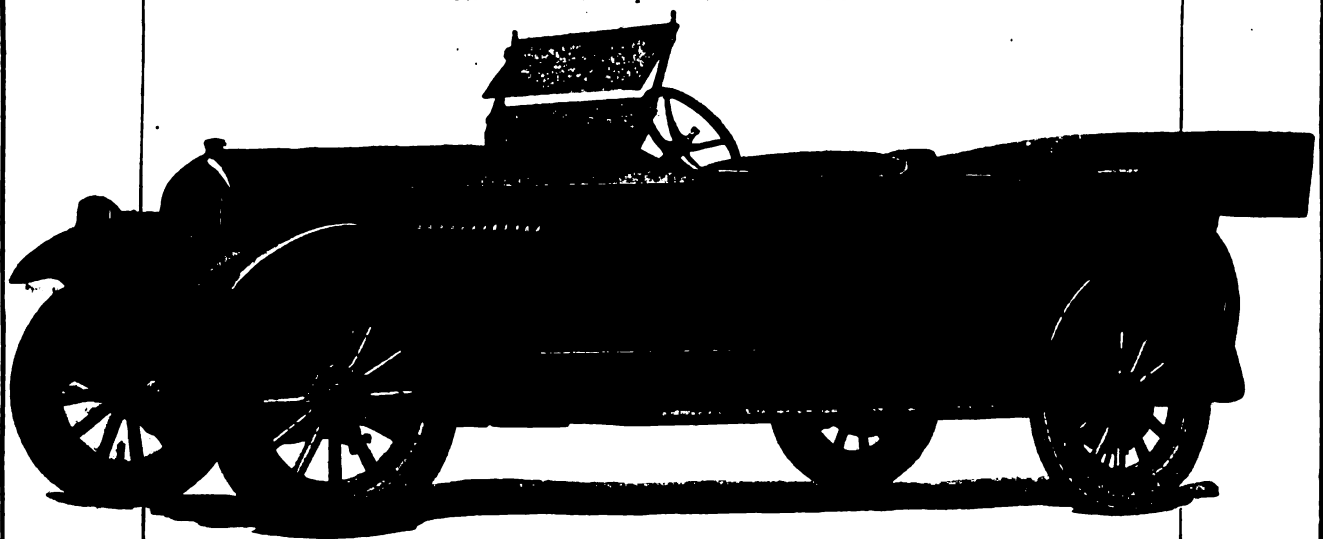
## STUDEBAKER

Detroit, Mich.

South Bend, Ind.

Walkerville, Canada

*Address all Correspondence to South Bend*







# Peteler Auto JACK

PAT. OCT 24 '93 OCT 24 '96 FEB 6 '19  
**Peteler**  
COE-STAPLEY MFG. CORP.

**\$7.50**

for  
**"The Best Jack in the World"**

We know that the trade would not wish us to depreciate the quality of the Peteler Jack. The advanced price is therefore made necessary by the continually increasing costs of material and labor.

**Strong Enough for the Extra-Heavy Jobs**

THE 3000-pound lifting capacity of the Peteler Jack makes it serviceable for 95% of all motor-driven vehicles in use in the United States. This means that the Peteler Jack can be used with complete confidence on all but the heaviest trucks.

**The Reasons Are Simple—and Obvious**

There are two important reasons for the foregoing statements. First, the design of the jack, which operates to the limit of the lifting bar, without being hampered anywhere throughout its length by a "danger line." There is no "danger line" on the Peteler Jack.

Second, the excess factor of overstrength—even beyond its designed lifting capacity of 3000 pounds—that comes from the use of the finest materials ever put into the working parts of a lifting jack.

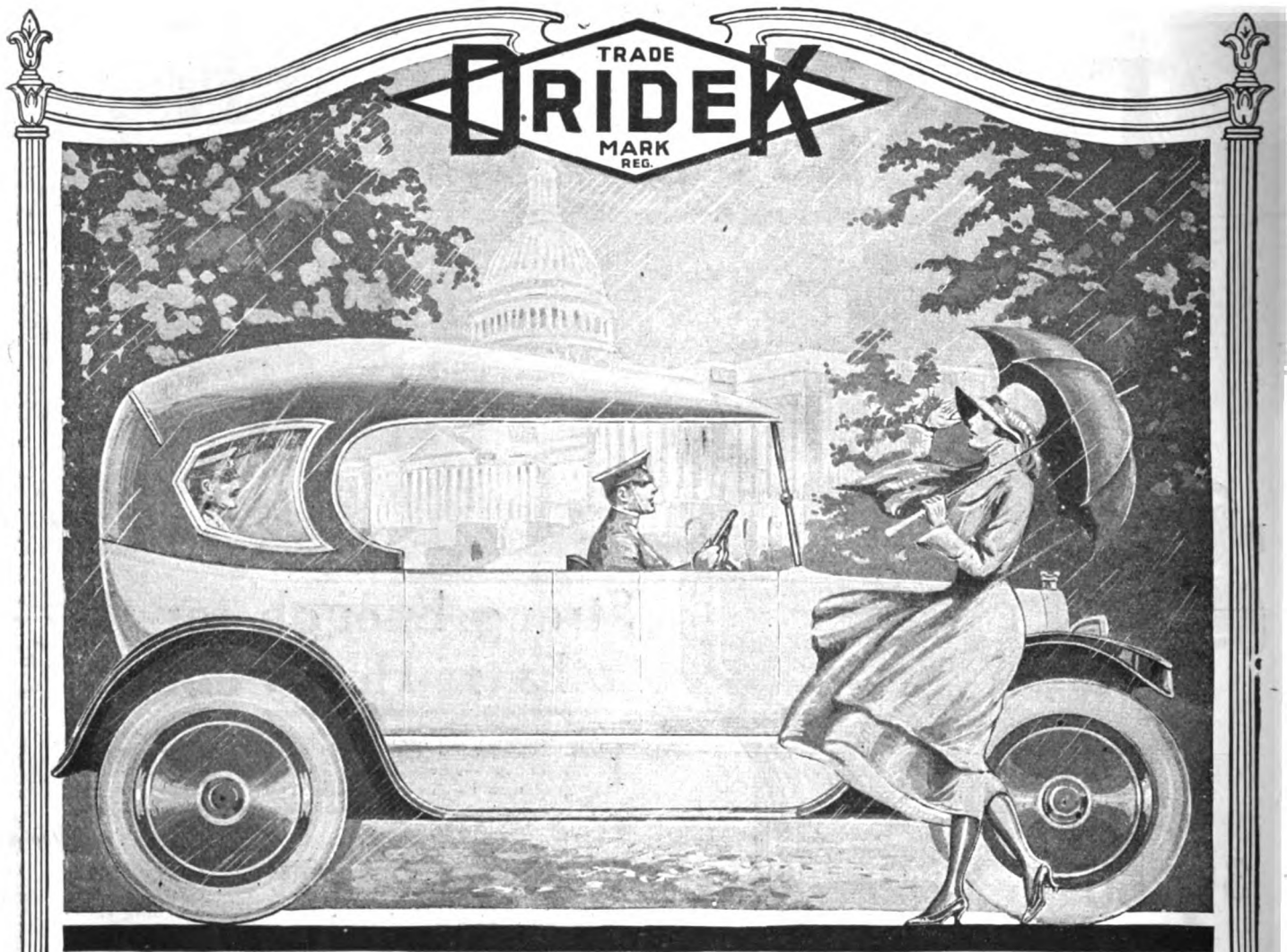
Combine these features with the extension handle that permits the operator of the Peteler Jack to work always in a standing position; the short, easy stroke; the ingenious reversing feature; its splendid proportions and fine finish, and you have a jack that earns the right to its title, "The Best Jack in the World."

We are working to top capacity to keep up with orders—but smart dealers can get prompt supplies from their jobbers. If you cannot, then write us.

**COE-STAPLEY MFG. CORPORATION**

Executive Offices: 135 Broadway, New York  
Factories: Bridgeport, Conn.

# COE-STAPLEY



## A DRIDEK Top Is Absolutely Waterproof!

**DRIDEK is the Most Remarkable Material Yet Produced  
For Automobile Tops, Side Curtains and Upholstery.**

DRIDEK is soft and pliable, easy to work, does not scratch or chafe. Bull Dog Quality all through.

A DRIDEK Top on a new car indicates the desire of the manufacturer to equip his car with the best the market affords.

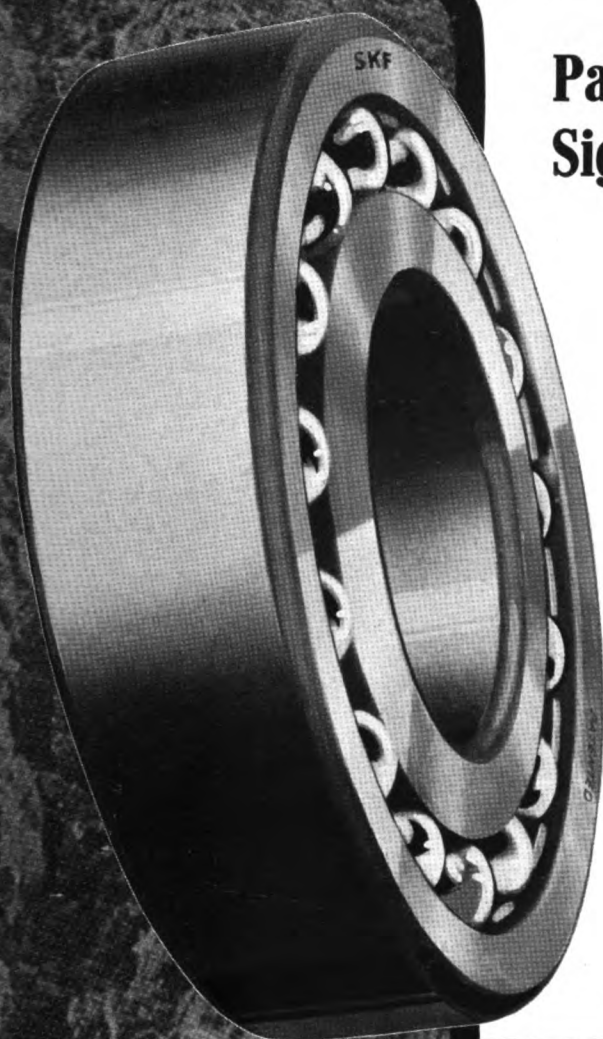
*If you don't know all about DRIDEK send for samples and price list to Dept. D at once.*

**L. J. MUTTY CO.,  
Boston, Mass., U.S.A.**





# SKF



## Parrett 103-Hour Endurance Run a Signal Triumph for SKF Efficiency

Plowing night and day at the National Tractor Demonstration at Salina, Kansas, an SKF equipped Parrett Tractor broke all records by running continuously for 103 hours. After the engine was stopped, the bearings were examined and found to be in perfect condition.

This test is characteristic of SKF reliability. Records are on file where a light electrically driven machine equipped with SKF Ball Bearings ran night and day for 472 days without attention.

Speed and endurance records are being made constantly with SKF Ball Bearings. Their service records speak for themselves. Parrett engineers who have a true appreciation of quality will tell you that SKF have the staying qualities needed for the rigorous work demanded of their tractors.

SKF quality and service — like SKF efficiency are always to the fore when big results are sought.

**SKF Ball Bearing Co.**  
**Hartford, Conn.**



66 **The Tractor Bearing**

# PARRETT QUALITY by 103 Hour

**A** GAIN, at the National Tractor Demonstration at Salina, Kansas, the Parrett has shown its remarkable efficiency. For years in actual farm work, under all kinds and conditions of farming, the Parrett has displayed an outstanding ability to work steadily, faithfully—to get the job done, and well done, without interruption—easily operated by the farmer or his boy.

At Salina, the Parrett had the opportunity of proving these qualifications publicly under the strict and constant scrutiny of such officials as Professor Sjogren, of the Nebraska Agricultural College; Professor Davidson, of the California Agricultural College; and Professor Shedd, of the Iowa Agricultural College.

For 103 hours and 19 minutes this ordinary stock model 12-25 Parrett worked its way up and down the field, night and day, its three 14-inch plows turning over the Kansas gumbo to a depth of 6.36 inches with but occasional stops for fuel, oil, water, etc. For 13 hours and 28 minutes of this time, actual plowing was held up on account of rain, but even then the engine ran constantly, idling at only 350 R. P. M. on kerosene with a cold motor! A truly remarkable exhibition of perfect carburetion of kerosene.

To further prove what a wonderfully successful kerosene engine there is in the Parrett, the tractor was disassembled at the end of the run, and barely a trace of carbon was found in the cylinders or on the pistons.

The actual number of acres plowed was 77, and the actual plowing time was .95 acres per hour.

Mind you, these are official figures, and note well that the fuel cost established a low record of 29 cents an acre, including fuel consumption for a total of 22 hours 36 minutes and 40 seconds idling time.

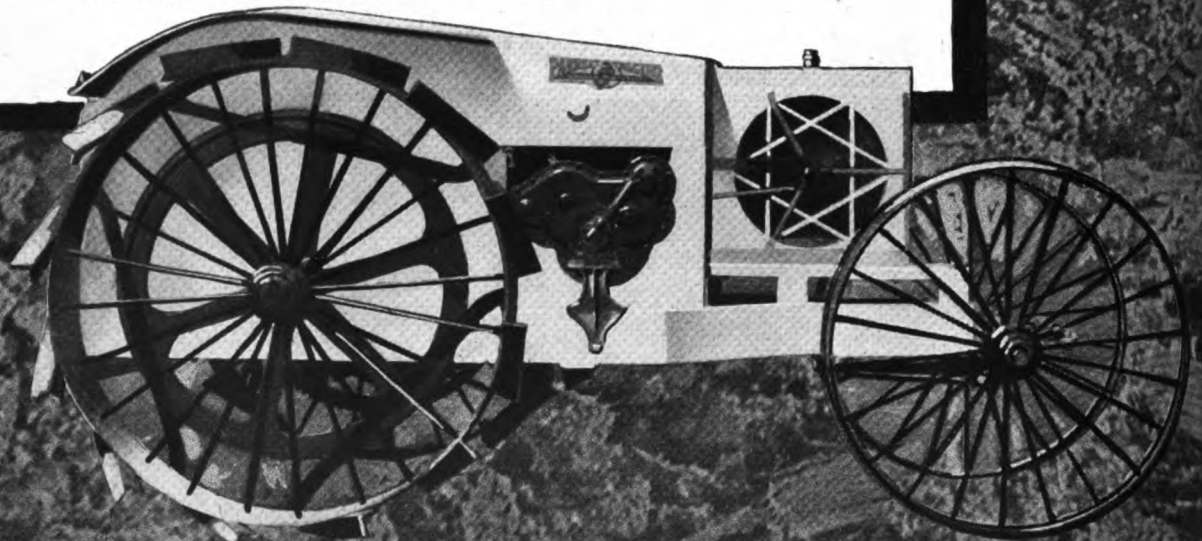
And all this was accomplished with a stiff, new engine and new plows.

These official facts set an example of steady, economical tractor work, such as every farmer wants. Write us for the whole story of this Salina test and for the Parrett catalog.

*Automotive Dealers and others who are now interested in the possibilities of the tractor field are invited to write us concerning some new Parrett dealer appointments.*

**PARRETT TRACTOR COMPANY, 426 Fisher Bldg., Chicago, Ill.**

**PARRETT**  
**12-25**  **TRACTOR**  
**PARRETT QUALITY SPEAKS FOR ITSELF**  
**ONE MAN** **ALL PURPOSE**



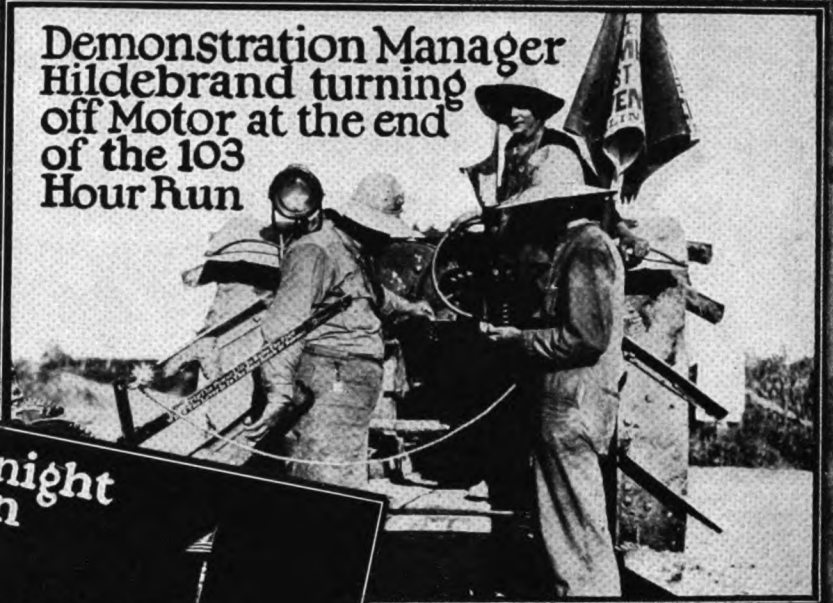


# AGAIN PROVED Endurance Run

Official Start of Parrett  
Endurance Run



Demonstration Manager  
Hildebrand turning  
off Motor at the end  
of the 103  
Hour Run



The Parrett working at night  
on its 103 Hour Run



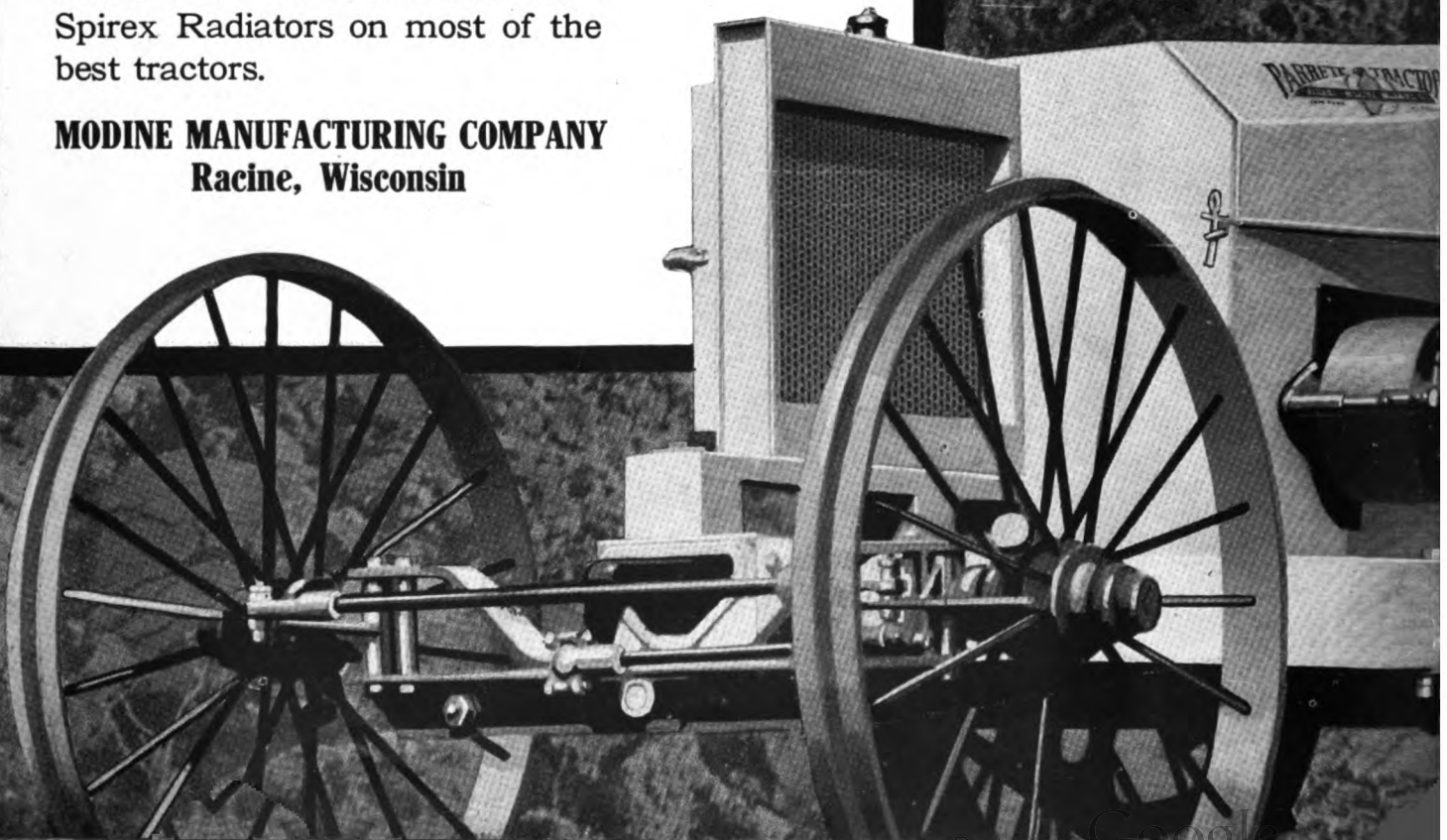
# UNFAILING COOLING SERVICE

**I**MAGINE a big motor truck running constantly for over four days and four nights, hauling its maximum load up one long continuous hill. This is a fair comparison to the enormous task that the Parrett Tractor accomplished in its remarkable endurance run at the National Tractor Demonstration.

Again, imagine what the cooling system must accomplish to safeguard this big, internal combustion engine under such a terrific test as this. Yet the Spirex Radiator gave unfailing service hour after hour, day and night, keeping this big, Parrett four-cylinder motor cool and warding off all of the many troubles that can be caused by overheating.

The reason for this is found in the distinctive Spirex construction—a construction that provides a radiator of light weight and extreme durability, with a cooling capacity far surpassing any radiator yet designed for the same service. You will find Spirex Radiators on most of the best tractors.

**MODINE MANUFACTURING COMPANY**  
**Racine, Wisconsin**





# Extraordinary Service at Low Cost!

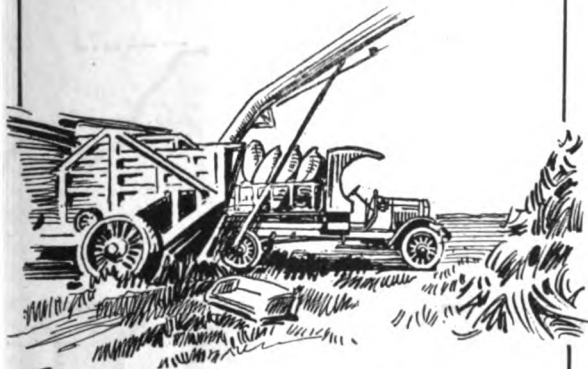


Here is a 1 1/2-ton Fulton Truck, with a SPILLMAN "4" Engine, "hauling 165 bushels of oats through soft stubble fields, load weighing approximately 5300 pounds."

The owner of this truck writes:

"We find that our truck handles this kind of a load with all ease. SEVERAL PARTIES seeing us put on our load OFFERED TO ASSIST US WITH THEIR TEAMS, if necessary, to get out; but when the FULTON was put in operation they were thoroughly convinced."

The SPILLMAN engine proved more than equal to the occasion.



"Mr. Kilgore says he finds that the Fulton gives as efficient service in the wheat fields as it does in the street, with LESS OPERATING EXPENSE than any other truck on the market. He also says that the LOW CONSUMPTION OF GASOLINE and the WONDERFUL POWER of the truck will appeal to any one who sees it perform—and that is why the selling resistance is reduced to a minimum."

The unparalleled power, troubleless performance and economical operation of the Spillman "4" are due to no freakish features of design or construction, but solely to skillful, painstaking, experienced workmanship, modern engine-building machinery of the highest quality, and materials selected for their special value in attaining the exact results desired.

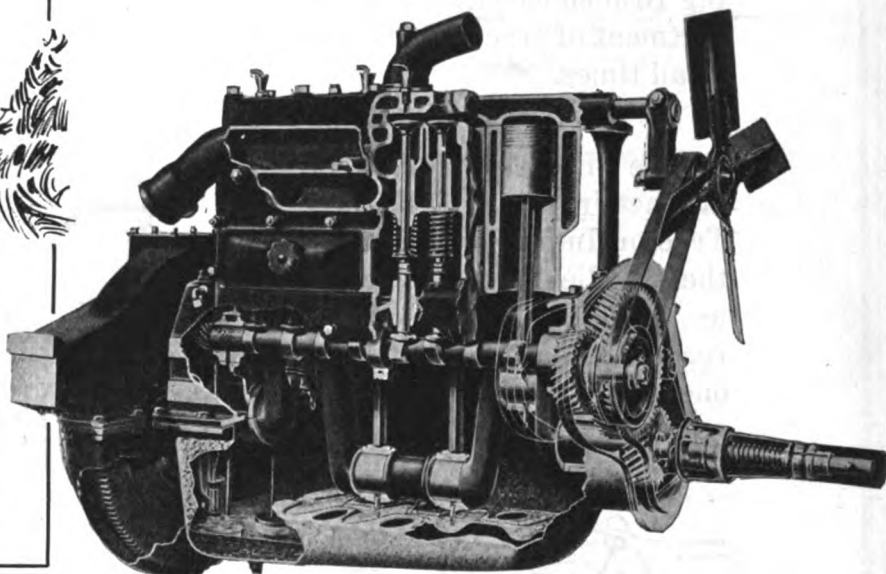
On 3/4-ton, 1-ton and 1 1/2-ton Trucks, the SPILLMAN "4" is unbeatable. Actual tests have repeatedly demonstrated its distinct leadership over other engines in its class.

3 1/4" Bore 5" Stroke

**Herschell-Spillman Co.**

North Tonawanda

New York



# SPILLMAN 4

3 1/4 X 5 — 4 CYL

When writing advertisers please mention Motor World—it identifies you

# 22 Branches Are Conver

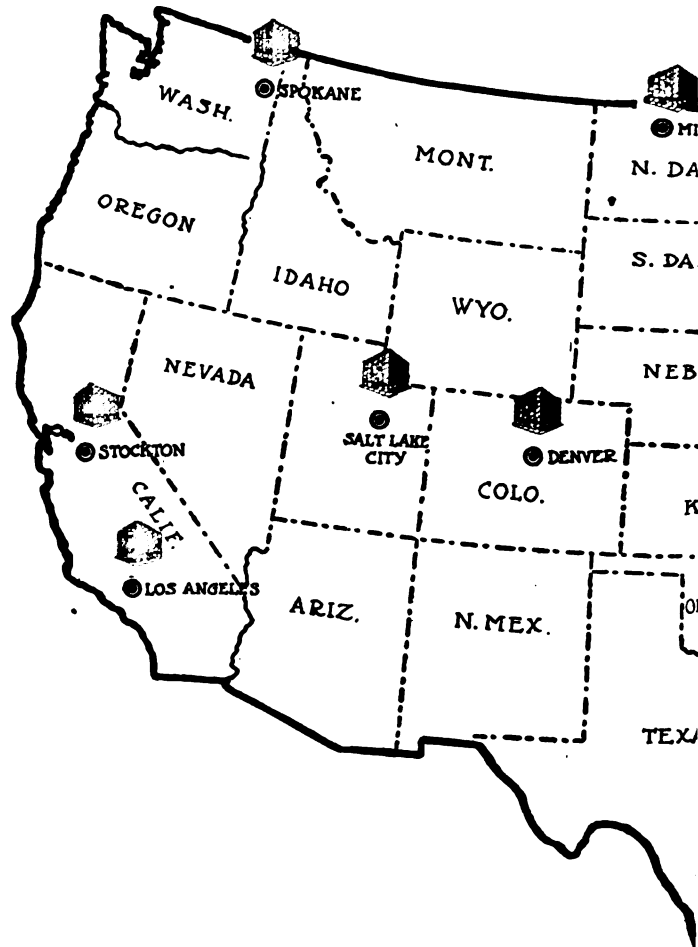
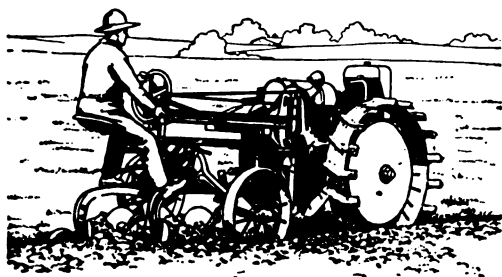
If you are a Moline Dealer—no matter where you are located—you are within short range of one of our 22 Factory Distributing Branches.

These branches have been established to give you and your customers prompt and efficient service.

These branches deal direct with Moline Dealers. In its territory each Moline Branch is equipped to give the same service that you could expect from the factory.

Every Moline Factory Distributing Branch carries a complete assortment of tractor parts on hand at all times.

Moline Dealers and users of Moline-Universal Tractors and Tractor Implements thus receive the speediest possible parts service. As a Moline Dealer you will recognize service of this kind as one of the most effective sales arguments.



# MOL UNIVERSAL

## MOLINE PLOW

**Factory and General Offices**

*Direct Factory*

Spokane, Wash.  
Los Angeles, Calif.  
Stockton, Calif.

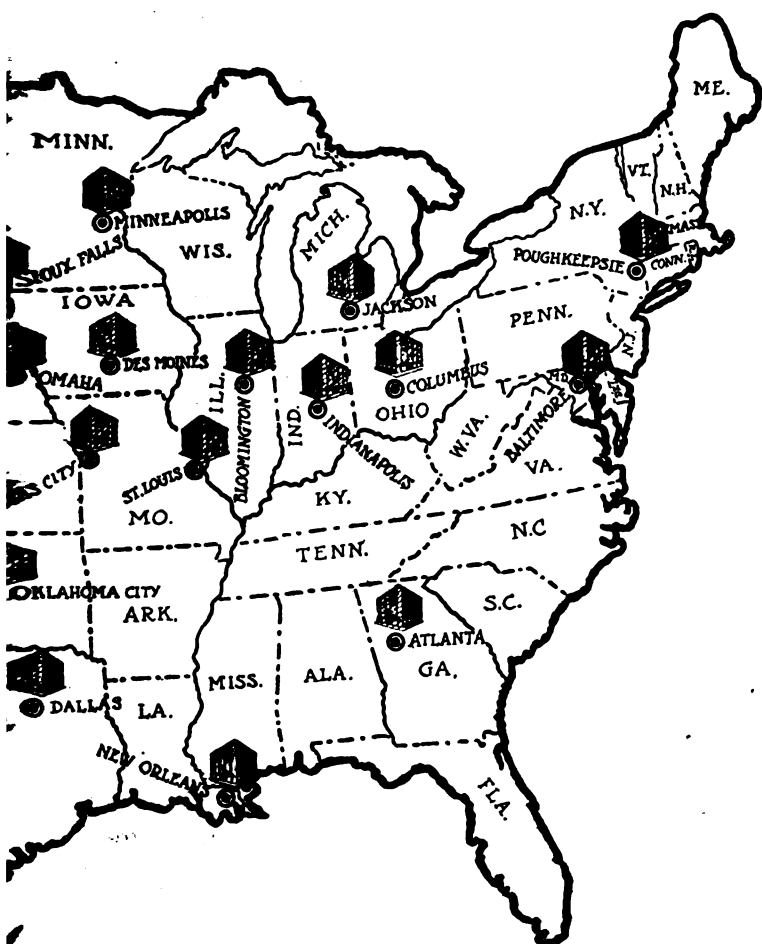
Salt Lake City, Utah  
Denver, Colo.  
Minot, N. D.  
Sioux Falls, S. D.

Omaha, Neb.  
Oklahoma City, Okla.  
Dallas, Texas  
Minneapolis, Minn.

*Convenient location of branch houses permits dealers to carry small*



# iently Located to Dealers



Located at each of these 22 Branches are Moline experts ready to co-operate with you on every phase of tractor sales, operation and repair.

Your efforts are continuously supported with the assistance of Moline specialists. You do not have to go it alone. You derive the advantage of their experience.

**The Moline-Universal is the original two-wheel, one-man tractor.** One man operates both tractor and implements from the seat of the implement.

It is the only tractor that will do all farm work, including cultivating.

It is the only tractor regularly equipped with electric starting and lighting.

These are only a few reasons why any motor car dealer can sell the Moline-Universal Tractor.

We will consider applications for open territory from high-grade motor car dealers. Wire, write, or visit us at the factory, and we will put you in proper touch with our nearest branch house.

# MOLINE

## TRACTOR

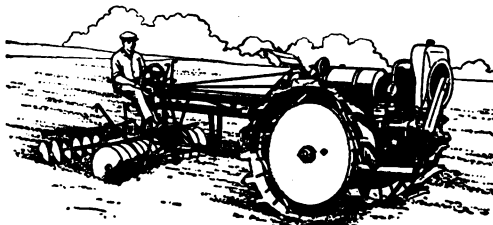
### COMPANY

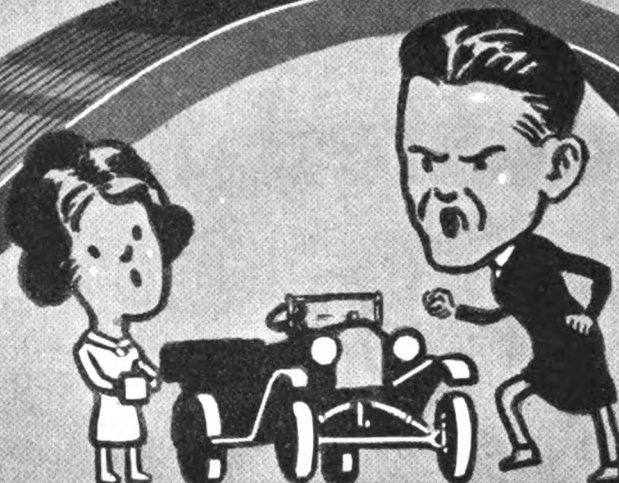
**MOLINE, ILLINOIS**

#### Branches at

Des Moines, Ia.	Bloomington, Ill.	Atlanta, Ga.
Kansas City, Mo.	Jackson, Mich.	Poughkeepsie, N. Y.
St. Louis, Mo.	Indianapolis, Ind.	Baltimore, Md.
New Orleans, La.	Columbus, Ohio	

Stock of replacement parts as branch houses carry complete stock

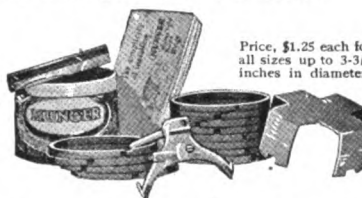




## Don't scold your FORD if it gets full of carbon

Make your pistons tight and stop the carbon jinx. Munger "Always Tight" Piston Rings FIT and hold compression so that you can adjust your carburetor ACCURATELY.

You get perfect combustion; that means NO CARBON. The "Always Tight" Expansion Joint makes these rings PERMANENTLY gas-tight by compensating for wear as it occurs.



Price, \$1.25 each for all sizes up to 3-3/4 inches in diameter.

The complete FORD Set consists of eight regular size "Always Tight" Rings for the lower grooves and four over-width "Always Tight" Rings for the top grooves. With each complete FORD Set a Munger Regrooving Tool and a Munger Ring Insertion Tool are included FREE.

Get them from your supply dealer or garage man.

SPLITDORF ELECTRICAL CO., New York, New Jersey

Sumter Division: 1466 Michigan Ave., Chicago

### SERVICE STATIONS:

Atlanta,	10-12 E. Harris Street	Minneapolis,	816 Hennepin Avenue
Boston,	63 Brookline Avenue	Newark,	278 Halsey Street
Chicago,	2613 S. Michigan Avenue	New York,	7 W. 61st Street
Dallas,	402 S. Ervay Street	Philadelphia,	210 N. 13th Street
Detroit,	1295 Woodward Avenue	Pittsburgh,	5943 Ellsworth Avenue
Kansas City,	1827 Grand Avenue	San Francisco,	1022 Geary Street
Los Angeles,	1215 S. Hope Street	Seattle,	1628 Broadway
		Toronto,	469 Yonge Street

Guarantee—If these rings do not give entire satisfaction, return them to the dealer and get your money back.

# Use

# MUNGER

## "Always Tight" Piston Rings

# Genco Light

"THE MOST RELIABLE FARM LIGHTING PLANT"

## Easier to Sell Because of Superior Mechanical Design and Efficiency

Dealers who have had experience selling several makes of farm lighting outfits generally find Genco Light easier to sell.

Genco Light has definite superiority in mechanical design, which is apparent to the average farmer. It does work no other farm lighting outfit will do. It does everything any other can do.

We want reputable, dependable dealers in many states.

We are prepared to prove to these dealers that they can make money selling Genco Light outfits.

Write us for full particulars—to-day.

### Specifications That Prove Superiority

**ENGINE:** High grade, vertical, 4-cycle, valve-in-head, counterbalanced crank, internal flywheel.

**CARBURETOR:** Burns kerosene, gasoline or alcohol. Adjustable handle for easy starting and for different fuels. Fuel tank holds one gallon and is connected to carburetor with copper pipe.

**IGNITION:** Special 22-volt type, distributor and coil.

**LUBRICATION:** Improved splash system of patented design. Oil gauge on crank case indicates oil level.

**COOLING SYSTEM:** Cellular radiator bolted to cylinder of engine; special adjustment to suit weather conditions.

**GENERATOR:** Our own design specially constructed in our own factory. Gives high efficiency under rated load. Armature shaft supported by angular ball bearings.

**CONTROL BOARD:** Bolted integral with generator; equipped with ampere hour meter; bi-pole switch connects battery to plant. 2-30 ampere fuses on house circuit, 5 amp. fuse on

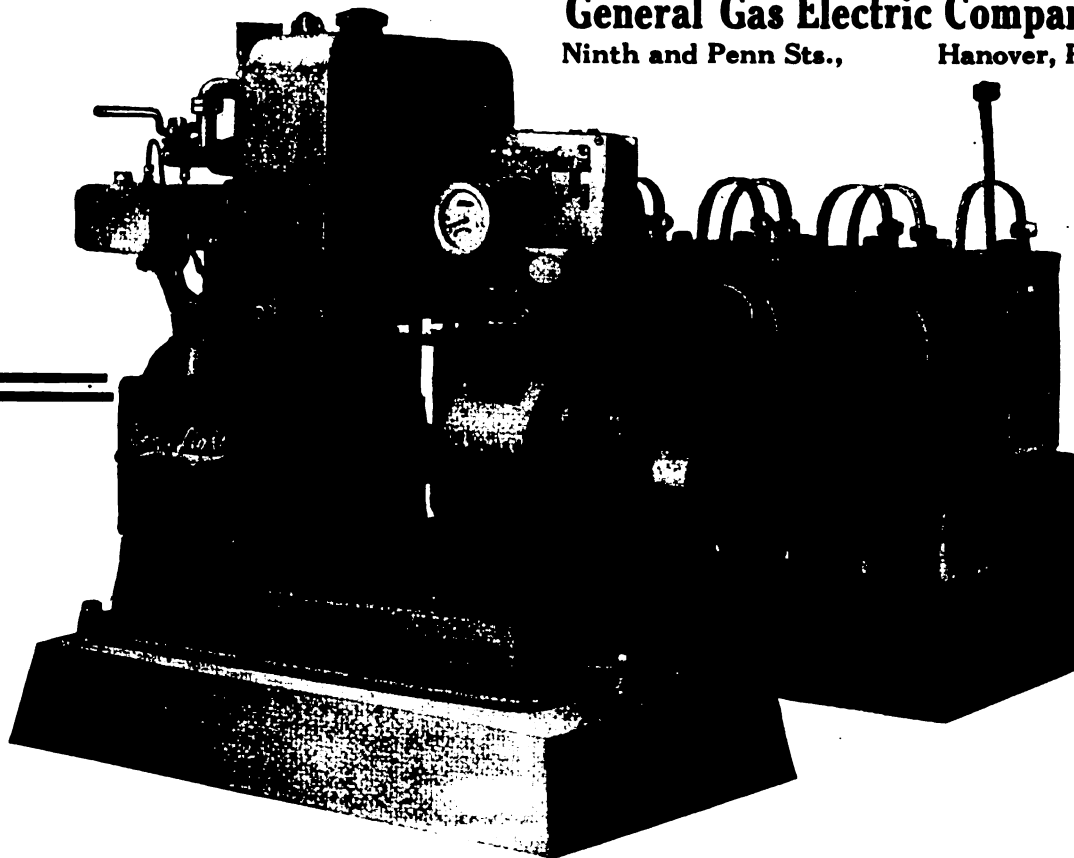
ignition circuit. All wiring at the rear completely enclosed and protected.

**STARTING SWITCH:** Outfit is started by pressing button on control board. Special cut-out stops engine automatically when battery is fully charged.

**BATTERY:** Our own special make, 16 sealed top, glass jars; plates extra thick, insuring long life. Cells shipped fully charged.

**MECHANICAL POWER:** Engine provided with pulley for driving machinery or lone shaft direct. Engine delivers 2 H. P. for such work.

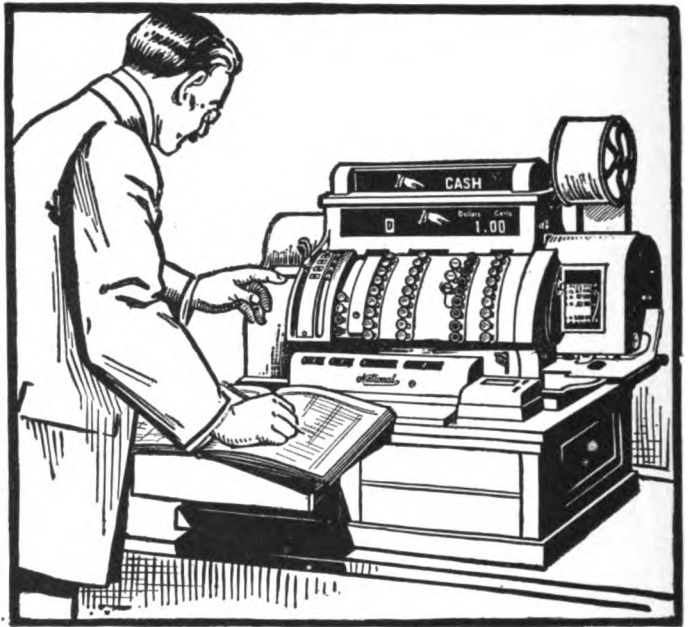
**General Gas Electric Company**  
Ninth and Penn Sts., Hanover, Pa.



When writing advertisers please mention Motor World—it identifies you



Without a National Cash Register



With an up-to-date National Cash Register

## A man should not do the work a machine will do for him

A National Cash Register does 15 necessary things in 3 seconds.

Without the register a man cannot do these things in half an hour.

With the register, even a new clerk can do them just by pressing the keys.

Our newest model makes the records which a merchant needs to control his business.

Our new electric machines are as much better than old machines as an up-to-date harvester is ahead of a sickle for cutting grain.

The latest model National Cash Register is a great help to merchants and clerks.

It pays for itself out of what it saves.

### Merchants need National Cash Registers now more than ever before

..... FILL OUT THE COUPON AND MAIL TODAY .....

Dept. 3418, The National Cash Register Company, Dayton, Ohio

Please give me full particulars about an up-to-date N. C. R. System for my kind of business.

Name.....

Business.....

Address.....

When writing advertisers please mention Motor World—it identifies you



*The*  
**MARMON**  
**CHICAGO COMPANY**  
*Announces to the Industry*  
*the*



*Complete Power and Lighting Equipment for  
the Modern Farm*

A War Time Necessity—An Automotive  
Solution of the Labor Shortage Problem

Tentative applications for open territory  
are invited from qualified motor car  
distributors and dealers.

Inquiries from responsible representa-  
tives in foreign countries solicited.

Wire or write

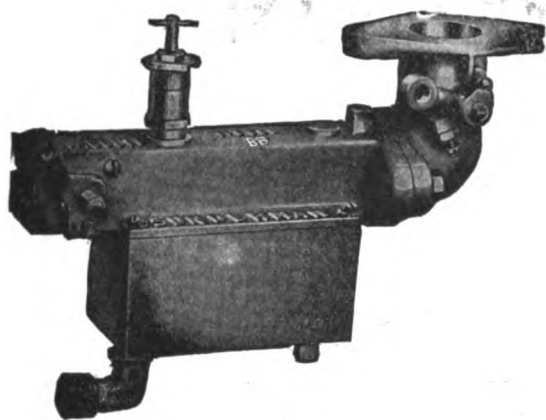
**THE MARMON CHICAGO COMPANY**

2430 MICHIGAN AVENUE

CHICAGO

# SUNDERMAN

## Vacuum Carburetor



MODEL BB

**\$8** WITHOUT CONNECTION  
 \$10 with regular connection  
 \$12 with special connection

Model F—Special for Ford, - **\$6**  
 Metz and Saxon Four - - - **\$6**

F. O. B. Newburgh

## Save Your Share With a Sunderman

Efficient Carburetion Is Today's Great Necessity

**Saves from  
30 to 50% of  
Gasoline on  
Any Car—  
More on  
Some Cars**

The Nation demands gasoline saving. So keen is the need for conservation that Sunday motoring east of the Mississippi is frowned upon. New York and suburban roads looked like a deserted village Sunday.

That proved two things: First, the essential part of modern life that the automobile fills. Second, the patriotism of the motoring public, which does not need the compulsion of law to respond to the nation's needs.

The Sunderman Carburetor comes into its own in times like these—because it *saves*. It saves surely, under all conditions of road, load, atmosphere or altitude.

**It Saves Because of Its Mixing Principle**

Briefly, the gasoline entering a Sunderman Carburetor is broken up so finely as to release the great amount of power usually lost in the ordinary mixture. Consequently, more power is gotten from a given amount of gasoline, and it takes less to operate a car with a Sunderman mixture. Thousands of testimonial letters are our authority for the statement that a Sunderman saves from 30 to 50% of gasoline on any car.

**Saves Gasoline without  
sacrificing  
power, speed  
or flexibility  
—prove it  
yourself.**

### Car Owners

You can do your patriotic *best*—not your *bit*—with a Sunderman Carburetor. Ask your dealer for it to-day. If he does not have it, write us and give the name and model of your car.

### Dealers

The length of life of this industry is up to you. Stiffen your backbone and keep things going. Get this Sunderman proposition—it will help your business—and at the same time show you a real profit.

### Manufacturers

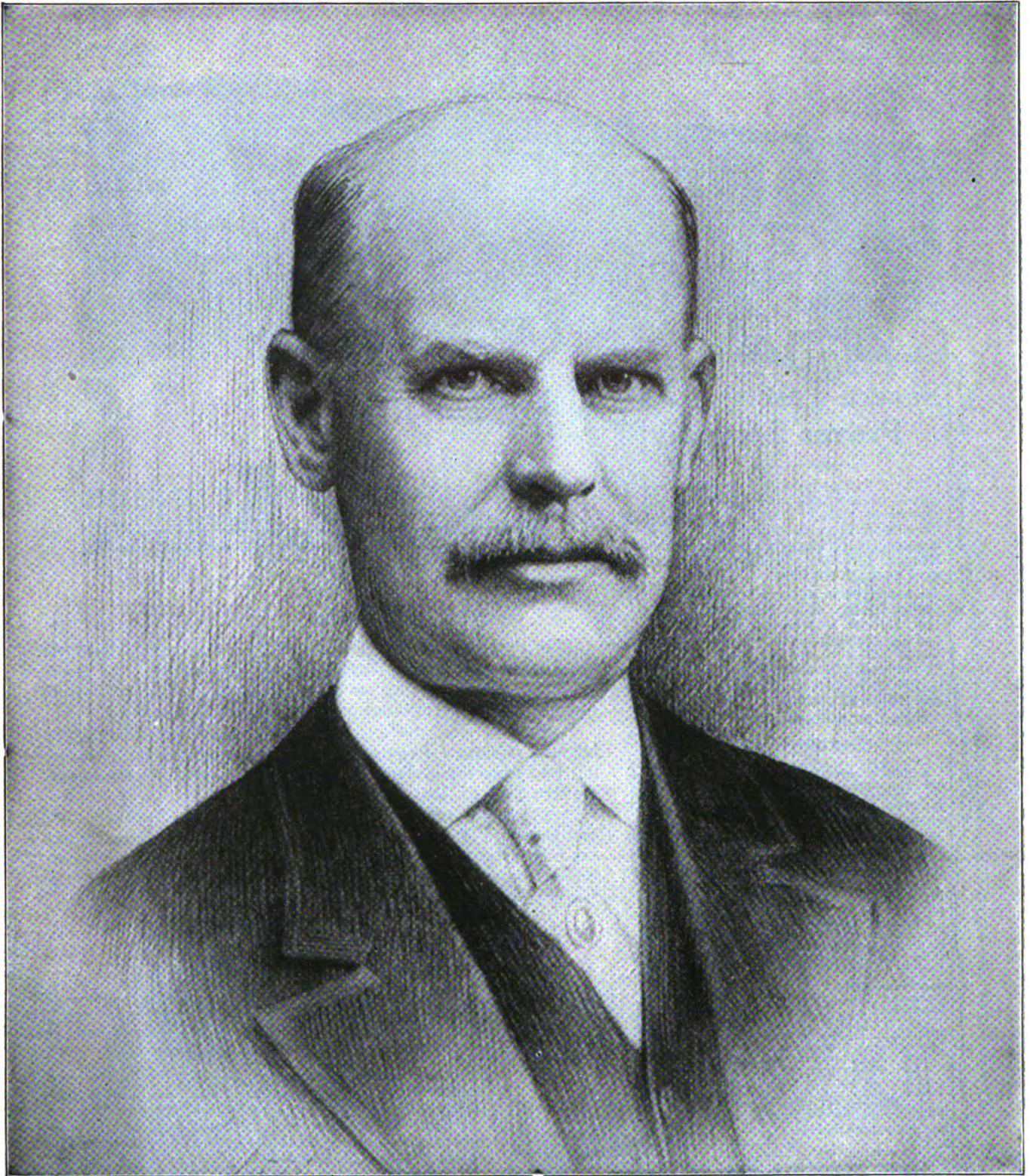
National necessity, your own self-interest and the industry's need all demand that you at least demonstrate for yourself what a Sunderman Carburetor will do on your car, truck or tractor. We *want* to co-operate with you—simply ask us.

**Sunderman Corporation,**

**9 Chambers St., Newburgh, N. Y.**

PACIFIC COAST BRANCH: 593 MARKET ST., SAN FRANCISCO, CAL.





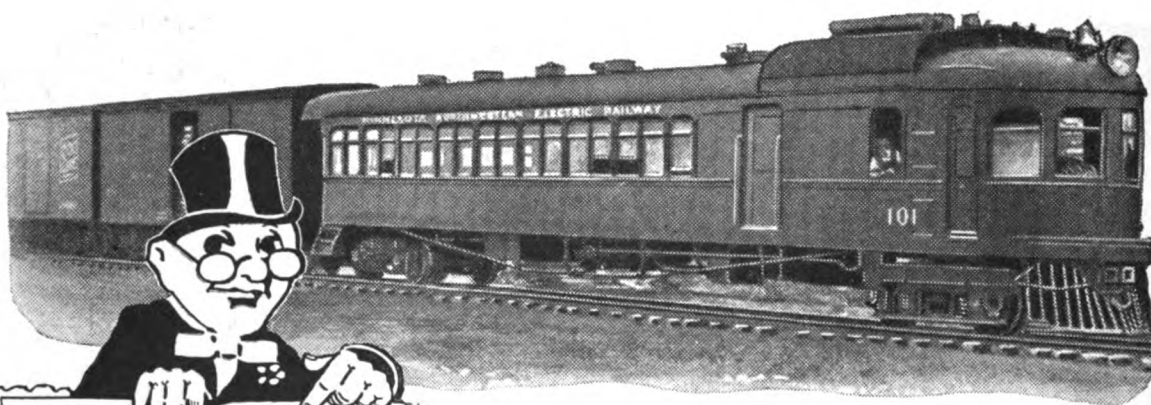
**EDWARD G. ACHESON, Sc.D.**

A pathfinder in discovery, invention and industry, whose genius gave to the world pure manufactured graphite, and other products of the electrical furnace. It was this eminent scientist who produced Gredag, the amazing grease containing 99.9% pure Acheson graphite. Twice has his scientific research won for him the John Scott medal, presented by the Franklin

Institute of Philadelphia. The American Academy of Arts and Sciences has also awarded him the famous Rumford medals. The award and presentation of the Perkins medal in 1910 came as a crowning tribute of appreciation from fellow-chemists and electro-chemists of the United States, who thus frankly and generously recognized his position in the field of science.

When writing advertisers please mention Motor World—it identifies you





## Severe Test Proves Economy

The following affidavit gives the result of a test made under unchanging conditions with a gas-electric railway car driven by an 8-cylinder 8"x10" motor on the Minnesota Northwestern Electric Railway. Freight load averaged same throughout.

On the basis of equal mileage the saving figures 460.1 gallons gasoline, 11.8 gallons lubricating oil; at 25c and 75c respectively the gross savings totals \$124.10; less Econ-O-Kleen at \$1 per can, \$30, the net total savings is \$94.10, a saving of more than 4c per gallon of gasoline.

Note that no carbon was deposited

Thief River Falls, Minn.,  
June 15th, 1918

I hereby certify that the following are the true and correct results of a test made with the use of ECON-O-KLEEN in the fuel used in our gas-electric motor car No. 101.

Period of test, March 1, 1918, to June 1, 1918.

Fuel used, Standard Oil Company's Red Crown, gravity 58-60.

Lubricating Oil used, Sinclair Refining Company's special railway motor oil.

Place of test, Minnesota Northwestern Electric Railway, Thief River Falls to Goodridge, Minn. Two round trips daily, three extra runs during period of test.

March 1 to April 15 without Econ-o-Kleen	1918	April 16 to June 1 with Econ-o-Kleen
39	No. of days run.....	40
3217.7	Car mileage.....	3408.7
2474.0	Total fuel consumed, gals..	2162.0
62.0	Lubricating oil, gals..	54.0
1.30	Miles per gal. of fuel..	1.58
51.8	Miles per gal. of oil..	63.1
63.4	Gals. of fuel per day..	54.0
1 oz.	Amount of Carbon formed	None

Saving percentages—  
Fuel..... 21.5%  
Lubricating oil..... 21.8%

Weather conditions averaged similar  
Track conditions same for both tests.

(Signed) WALTER R. PATTERSON,  
Supt. of Motive Power,  
Minn. N. W. Elec. Ry. Co.

Subscribed and sworn to this 28th  
day of June, 1918, before me, a Notary  
Public.

(Notarial Seal) LOUISE MAJERES,

Notary Public, Pennington Co., Minn.  
My commission expires March 21, 1925



## More Proof!

# ECON-O-KLEEN

IMPROVES GASOLINE—BURNS CARBON

## Saves Gasoline, Oil and Repairs

The newspaper clipping with affidavit reproduced herewith gives disputable proof of the extent of the economy of Econ-O-Kleen, where results could be checked accurately. Automobile owners everywhere are learning of its merits.

It goes in with the gasoline, adds oxygen to the mixture, burning it clean. It gets all the power from gasoline—cleans out and prevents carbon—turns all carbon into power—makes perfect fuel of low-grade gasoline.

It solves the problem of meeting increased overhead costs and shortage of help in the repair shop. It frees your customers of carbon trouble, and pays you a good net profit. It conserves the country's gasoline supply and relieves transportation facilities.

## Get This Profitable Business

The market for Econ-O-Kleen is limited only by the number of gasoline motors of all kinds in your territory. When a man uses it once he buys again—and he boosts it to his friends. You can build up a big, profitable business on Econ-O-Kleen.

Every can is guaranteed. The purchase price is refunded direct to the customer by us, not you, if there is dissatisfaction. Thus far not a can has been returned. Write for terms. Send \$1 for trial can, prepaid, enough to treat 112 gallons of gasoline. Our book "Ashes of Gasoline" sent free upon request. Write today.

## Econ-O-Kleen Fuel Co.

105 Labree Avenue

Thief River Falls

Minnesota

**Sold by all Wide-Awake Garages and Supply Stores**



THE  
FASTEST  
SELLING AUTO  
ACCESSORY ON  
THE MARKET  
**\$3<sup>50</sup>**

*Every Motorist  
Wants One*

# AUTO BIRD

TRADE WHISTLE MARK

## Sings and Trills Like a Bird

A DISTINCTLY different warning signal—has a thousand variations of tone and intensity—exactly expresses the driver's needs—sweet and persuasive—loud and commanding—shrill and far-reaching—as desired. Adds class to any car.

### Easily Installed— Fits All Cars

Attaches to exhaust manifold of any car—uses waste gas—costs nothing to operate—controlled from the dash or steering wheel—is self-cleaning—cannot get out of order—will outlast the car.

### Sold on Positive Money-Back Guarantee

So confident are we that the "AUTO-BIRD" will please every motorist, that we will cheerfully refund the purchase price, if desired, after 10 days' trial. Guarantee tag attached to every "AUTOBIRD".

The "AUTOBIRD" is heavy nickel finished—and comes attractively boxed with full instructions for installing. Price, \$3.50 complete. (In Canada, \$5.00)

### Dealers and Jobbers

Stock up at once—the demand is great and increasing—it's the fastest-selling auto accessory on the market. Get our extra liberal proposition—it means big money for you. Cut out and mail coupon TO-DAY. Prompt delivery.

### Auto Owners

Insist on "AUTOBIRD"—ask your dealer—if he cannot supply you, use coupon and we will send postpaid on receipt of \$3.50. Try it for 10 days—if you are not delighted with it, send it back and we will refund your money.

**RICHFIELD MFG. CO.** Sole Manufacturers 1918 Pine Street **St. Louis, U.S.A.**

**Richfield  
Mfg. Co.  
1918 Pine St.  
St. Louis, U.S.A.**

I enclose \$3.50, for which send me one sample "AUTOBIRD", postpaid, on your "Money-Back Guarantee".

Name.....

Address.....

State if Dealer or Jobber.....  
and we will also send our unusually attractive proposition.

When writing advertisers please mention Motor World—it identifies you





## Constant Performance Everywhere

What scientific investigation and engineering skill have dictated in Remy equipment, practical experience has borne out to the fullest degree.

Remy has the advantage of nineteen years steady progressive growth, side by side with the automobile itself, and last year manufactured over two hundred thousand Remy products, to say nothing of more than a million that went into service before.

Yet even with a successful record like this, Remy engineers are still at work seeking to raise still higher the standard of "Products of Constant Performance" in order to anticipate future requirements.

It is this record and this constant progress that inspire confidence when the salesman answers your Starting, Lighting and Ignition question by saying "Remy."

# REMY

**STARTING LIGHTING IGNITION SYSTEMS**

### REMY ELECTRIC COMPANY

*Motor Equipment Division*  
Detroit, Michigan

*General Offices and Factories:*  
Anderson, Indiana

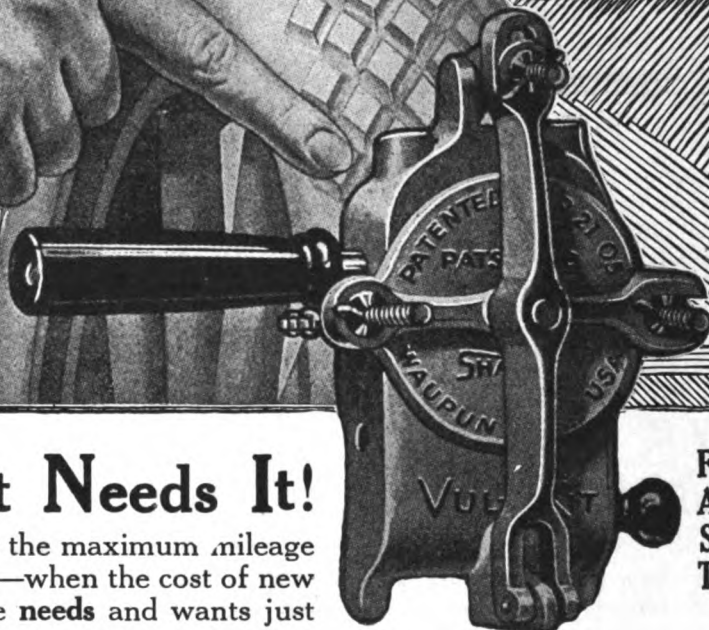
*Laboratories:*  
Detroit, Michigan

*Tractor Equipment Division, Chicago, Ill.*

# SHALER Vul-Kit

**\$3<sup>50</sup>**

**Repairs  
Casings  
and Tubes**



## Every Motorist Needs It!

Every motorist wants to get the maximum mileage from his tires. Now especially—when the cost of new tires is tremendously high—he **needs** and wants just this kind of a tire saver!

The SHALER Vul-Kit fits any size tire—casing or tube. It mends the holes and cuts in the casing that tend to rot the fabric and cause blowouts. Will repair any puncture, tear or cut in the tube. It is simple and easy to operate—anyone can get perfect results without previous experience.

**Fits  
Any  
Size  
Tire**

## Make Money Selling This Popular Outfit

No new car is supplied with a tire saving device—every car owner should have a SHALER Vul-Kit in his tool box. It is easy to sell—our advertising acquaints motorists everywhere with the SHALER Vul-Kit and they call for it by name. Just let them know that you sell it—and they'll quickly step in and buy it. Every Vul-Kit you sell leaves you a good profit—besides it gives you a continuous profit on the resale of repair material and supplies which the motorist must have—and it brings car owners to your place, who also buy other goods!

## Every Jobber Sells It—Ask Yours

Motorists in your vicinity will insist on having the SHALER Vul-Kit. Don't let your competitor make these profits that should come to you. Write your jobber today for prices and dealer selling helps—or order a supply of Vul-Kits NOW so that you can begin making these big extra profits at once.

*Catalog of Complete Line of SHALER Vulcanizers for Garages, Repair Shops and Motorists Mailed FREE on Request.*

**C. A. Shaler Company, 435 Fourth Street, Waupun, Wisconsin**

*Oldest and Largest Manufacturers of Vulcanizers*



"This Hyatt equipped truck was driven through a field plowed 14" deep. The test took place on September 20th, 1917, at the Vail Ranch Tractor Demonstration."



## Punishment Tests Have Simply *Proved* Them

# HYATT

## QUIET

## ROLLER

## BEARINGS

Hyatt Bearings—like the majority of products that hold unqualified records—have run the gauntlet of punishment purposely aimed to find their limit of endurance.

As yet, it has not been found. In fact, these forced applications of punishment have simply *proved* Hyatts.

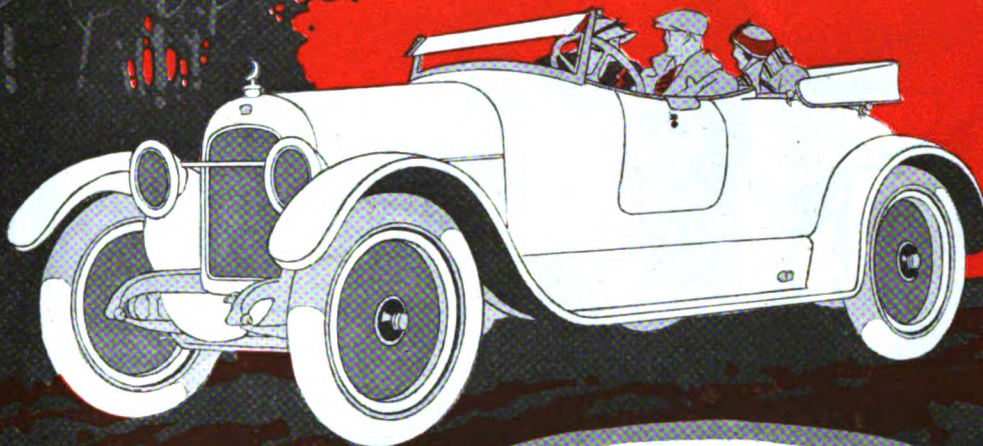
Their strength has been shown to be practically a super-strength. Their dependability — inexhaustable. Their carefree service—their ability to clean themselves, to oil themselves, to keep themselves in perfect working order—100% infallible.

The added life and lower upkeep costs of every truck and passenger car in which they are installed are tangible evidence of the wisdom of an investment in motor bearings that absorb shocks and reduce friction.

Hyatt Roller Bearing Company  
Detroit Chicago New York



# MOON CAR'S



## Their Beauty is the Outward Expression of Their Worth

Any man or woman who is attracted by the looks of a car is a pretty good prospect for the dealer, because once interested they will be ready and anxious to know more about it.

Moon Cars are recognized for their looks—and they are just as good as they look. Most Moon owners were first attracted to the Moon by the broad, sweeping lines—the style and beauty, which they soon discovered was not to be duplicated in other cars selling at such a price.

Just read the list of Moon Specifications—they speak for themselves in terms of quality, reliability and faithful performance.

### Six—66

Seven Passenger Touring and Club Roadster.

**\$2,500**

f.o.b. St. Louis.

#### [Specifications Six—66

125 Inch wheelbase; Red Seal Continental Motor; Honeycomb radiator, new, high type with removable shell; Delco starting and ignition; Timken axle and Bearings; Stewart Speedometer; Double ventilating and rain-vision windshield; Upholstered in Genuine Tan Spanish Leather.

### Six—36

Five Passenger Touring. Fully equipped.

**\$1,485**

f.o.b. St. Louis.

#### Specifications Six—36

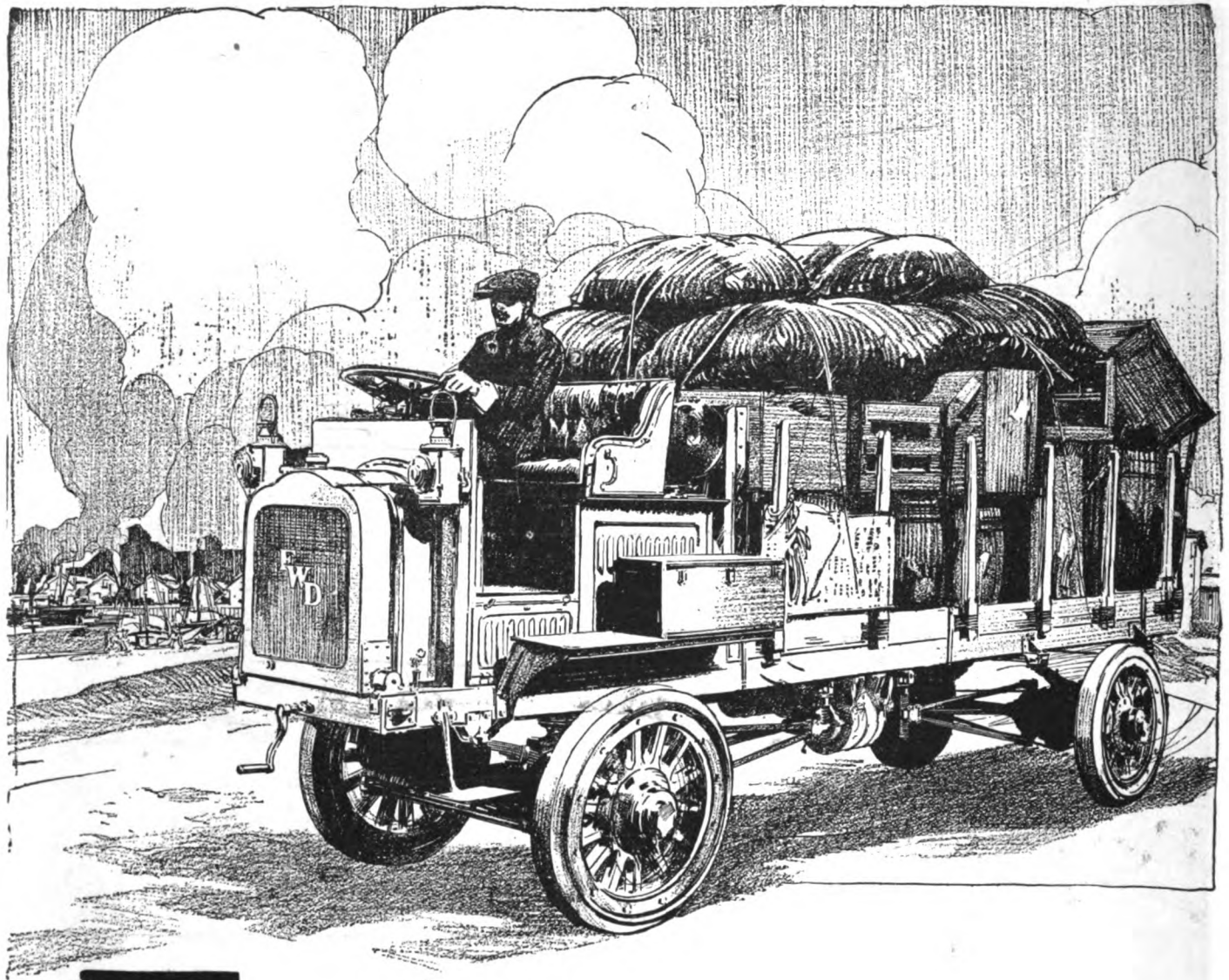
114 Inch wheelbase; Red Seal Continental Motor; Fedders Radiator, new, high honeycomb type; Delco ignition; Electric lights with dimmer system operating from dash; Solid walnut instrument board, front and rear; Sweeping double cowl; Slanting windshield; Upholstered in Genuine Tan Spanish Leather.

PROMPT DELIVERIES are assured by the location of the Moon factory outside the congested freight district. Some choice territory is open to a live dealer. Write or wire for particulars.

**Moon Motor Car Company**

St. Louis, U. S. A.





# F-W-D Trucks

## Last Longest

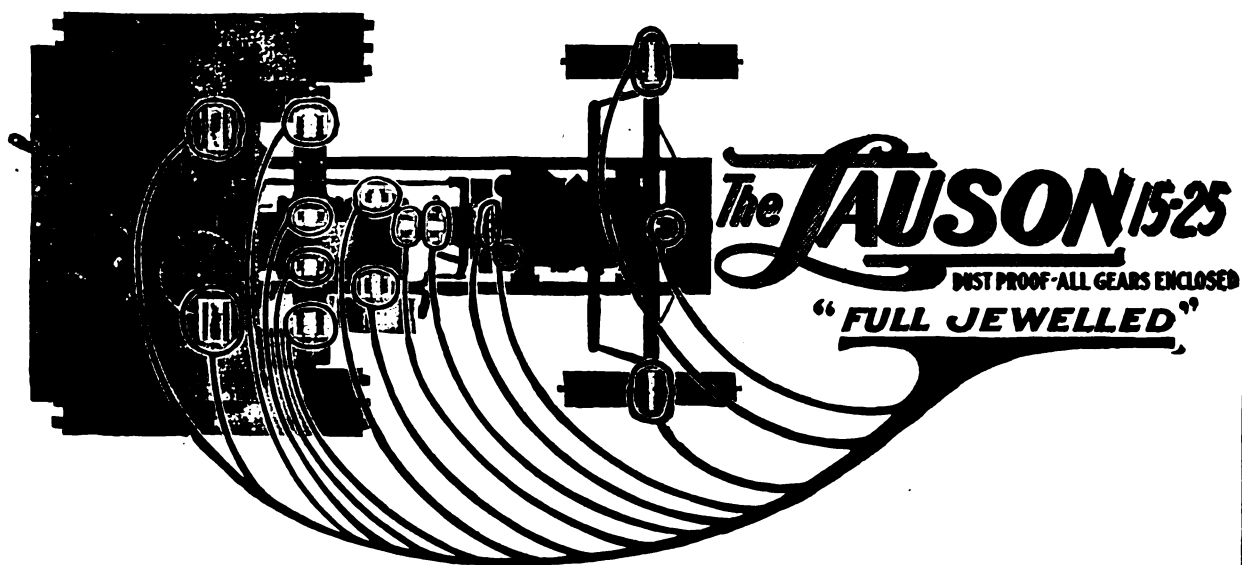
**I**N addition to their great advantage of four wheel driving power—every wheel a driving wheel—proper weight distribution is another point of immense superiority in F-W-D Trucks.

Hard, continuous road service only

emphasizes their reliable performance and economical operation.

Our new catalog gives full details of construction and shows clearly how the four wheel drive principle is correctly and exclusively applied in F-W-D Trucks.

**Four Wheel Drive Auto Company, Dept. P, Clintonville, Wisconsin**



## THE "FULL JEWELLED" TRACTOR

Everyone knows the value of the watch with the "Full Jewelled" Movement—it can be depended upon. In the LAUSON 15-25 we have followed the full jewelled idea by equipping it with 24 Hyatt and Timken Heavy Duty Roller and Ball Bearings. These mean to the tractor what the jewels mean to the watch movement. They insure easy running, no friction, dependability, long life and power.

Combined with the LAUSON dust-proof design—all gears enclosed and running in oil—and LAUSON rugged construction, the LAUSON owner has real tractor insurance for field or belt work, year after year.

### SPECIFICATIONS

Rating—Draw-bar H.P. 15; Belt H.P. 25.  
 Engine—Lauson-Beaver,  $4\frac{1}{2}$ -inch bore, 6-inch stroke. Valve in head.  
 Number Cylinders and Cycle—Four.  
 Normal Speed—950 R. P. M.  
 Lubrication System—Splash and force feed.  
 Ignition—Dixie Magneto.  
 Carburetor and Fuel System—Kingston Gravity Feed.

Cooling System—Perfex Radiator.  
 Belt Pulley—18" x 8"; 475 R. P. M.  
 Transmission—Lauson Selective Type—sliding gear. Oil tempered gears.  
 Number Speeds Forward—Two.  
 Speed, M. P. H.—Low,  $1\frac{1}{4}$ ; plowing,  $2\frac{1}{4}$ ; high,  $2\frac{1}{2}$ .  
 Number Wheels—Four.  
 Drive Wheels—54-inch diameter; 12-inch face.

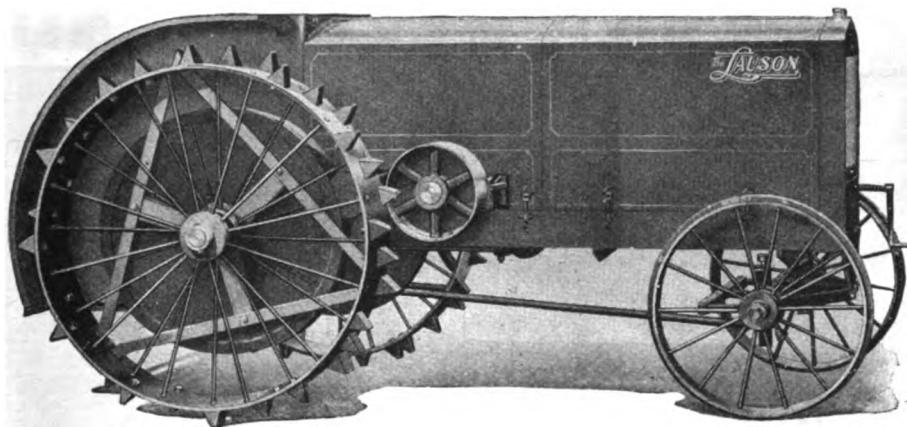
Guide Wheels—32-inch diameter; 6-inch face.

Wheelbase—86-inch.

Tread—52-inch.

Total Weight, less fuel, water, oil and lugs—6000 pounds.

Shipping Weight with Standard Equipment—6500 pounds.



Owing to our increased output we are now in position to offer some desirable territory to dealers who can qualify for the LAUSON Sales and Service organization. If you are interested in selling the "Full Jewelled" Tractor — write us for particulars.

## The John Lauson Manufacturing Company

358 MONROE STREET

NEW HOLSTEIN, WIS.



FOR centuries, California's magnificent specimens of gigantic tree growth in Mariposa Grove have been emblematic of strength and durability.

Likewise, for years, UNITED STATES TIRES have been the embodiment of hardihood and good service.

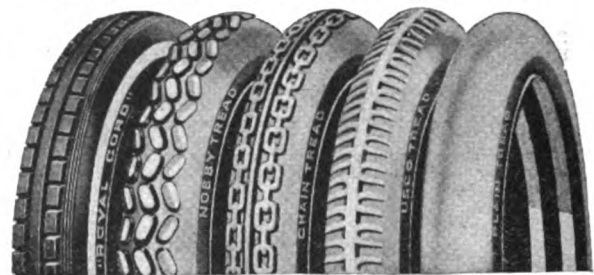
Benefit your trade by stocking this durable, well-made line.

## United States Tires Are Good Tires

*Also Tires for Motor Trucks, Motorcycles, Bicycles  
and Aeroplanes*

*United States Tubes and Tire Accessories Have All  
the Sterling Worth and Wear That Make  
United States Tires Supreme.*

*Royal Cord Nobby Tread Chain Tread Usco Tread Plain Tread*



When writing advertisers please mention Motor World—it identifies you

Digitized by Google





# Traffic Truck

4,000 LBS. CAPACITY

**\$1195**

THE LOWEST PRICED 4000 LB. CAPACITY TRUCK IN THE WORLD



## The "Ace" of American Trucks

The "Traffic" has conquered! It has won over all competition by clearing the field of every obstacle between dealer and user with its performance and price.

Trucks are helping to win the war and in face of the nation's draft for manpower—farmers, merchants and manufacturers realize the importance of motorizing their hauling, because—

### Some "Traffic" Features

Weight, 3,300 lbs.; Gray motor, 4-cylinder valve-in-head, 35 h.p. Covert transmission; multiple-disc clutch; Kingston magneto; cellular type radiator; drop forged front axle with Timken roller bearings; Russell rear axle, internal gear, roller bearings; semi-elliptic front and rear springs; 6-inch U-channel frame; Standard Fisk tires; 133-inch wheelbase; 122-inch length of frame behind driver's seat; oil cup lubricating system—and many other features for perfect performance.

Speed and efficiency, coupled with economy, is the call of the hour, and the Traffic Truck has fully answered it.

The "Traffic" is all truck—everything that counts for performance has been put in—fancies and frills have been left out—it is built for work, not beauty—and is the greatest truck value in the world today.

Representative dealers who figured on the future as well as the present with "Traffics" are now enjoying a profitable go-ahead business—if you think you can measure up to our requirements, there is still some territory open. Wire first to find out whether or not your territory is covered—it will save us both time.

## TRAFFIC MOTOR TRUCK CORPORATION

3807-19 Laclede Avenue, St. Louis, Mo.

# STANWELD PARTS

## Standard Parts for Motor Cars, Trucks, Tractors, Airplanes, Motorcycle and Other Vehicles

<b>Axles</b>	<b>Perfection Springs</b>
<b>Axles (dead rear)</b>	<b>(regular and thin leaf)</b>
<b>Axles, trailer</b>	<b>Perfection Heaters</b>
<b>Box Bearings</b>	<b>Stanweld Rims</b>
<b>Hubs</b>	<b>and Tubing</b>

## Other Stanweld Products

Rims—clincher detachable and demountable for single and dual equipment	Bands S. A. E.
Clincher Rims	Formed Tubing
Detachable Rims for Wire Wheels, special	Forging for Convertible Trucks
Millimeter Rims, all types	Ignition Wiring Tubes
Rim Tools	Lamp Brackets
Flanges and Fittings Solid Tire Demountable Equipment	Mast Sleeves
Tire Bases in Demountable and Pressed on Channels	Oil Tubes
Brake Rod Assemblies, complete	Radiator Rods
Starting Cranks	Starting Gear Rings and Boxes
Electric Welding of Parts	Straight Steel Tubing
Exhaust Tubes	Steering Gear Tubing
	Tail Pipes
	Torsion Tubes
	Truss Rods
	Tubing (straight and formed)

## First Comes the Government Then You, With All Our Might!

First for our consideration comes the Government's needs.

Our attitude in this matter is *your* attitude—in proportion as you help us serve the Government, *you* are serving it.

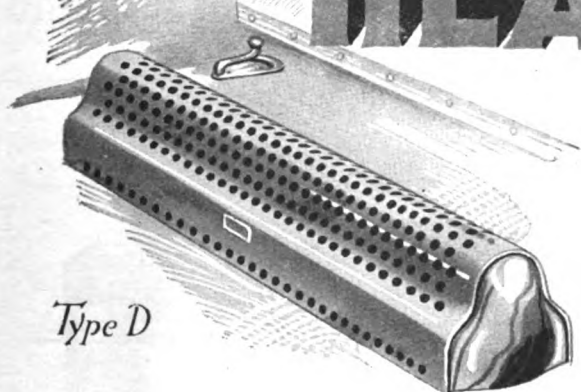
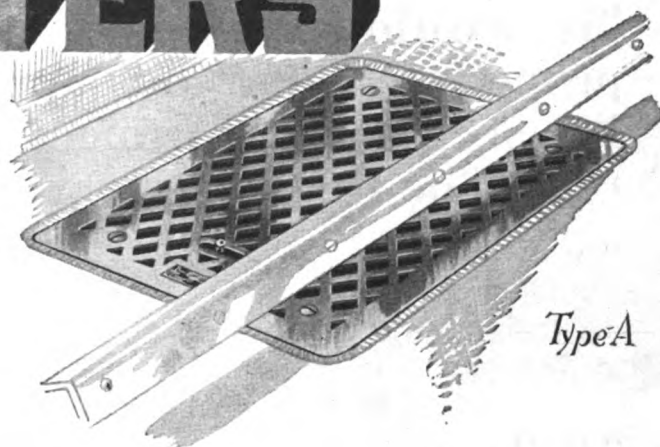
By doubling and redoubling our efforts and by utilizing our vast facilities and resources to the utmost, we are straining to take care of trade needs.

Working together in this spirit we shall jointly aid our country and protect our mutual trade interests.

The Standard Parts Company, Executive Offices, Cleveland, Ohio



# PERFECTION MOTOR-CAR HEATERS

*Type D**Type A*

## Exceptional Opportunity for Perfection Heaters—Order at Once

Existing motor cars will be more generally used this fall and winter than ever before.

Transportation conditions require the use of *more* cars, more continuously.

Garage Installation of Perfection Heaters will be exceptionally large, with dealers looking to the jobbing Trade for supplies.

The increase of 300 per cent in the sales of Perfection Heaters for motor cars indicates the thriving condition in this business.

It is wisdom to order now and avoid delays or disappointments possible because of shipping conditions that may become more difficult as winter approaches.

The Standard Parts Company, Perfection Heater Div'n, Cleveland, Ohio

## THE BUYER FOR A HARDWARE HOUSE IN THE AUTOMOBILE SUPPLY BUSINESS

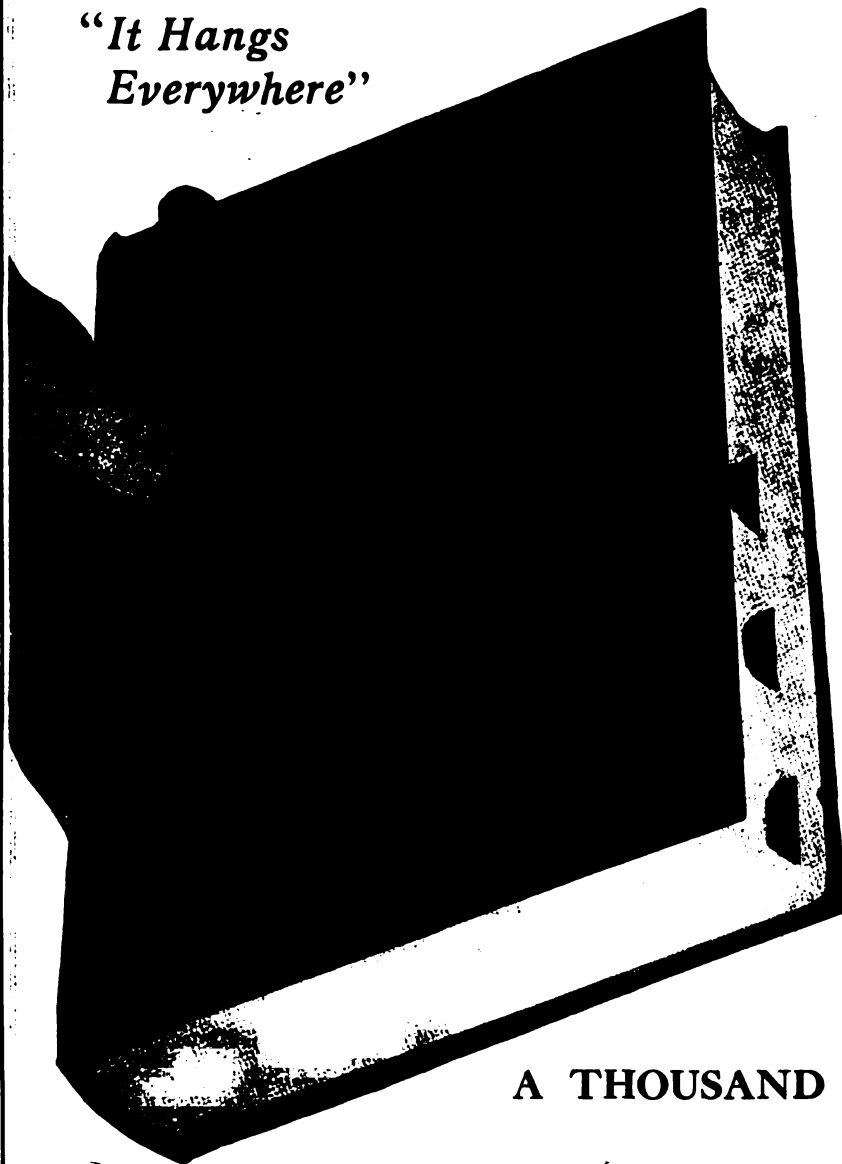
*says—*

**"It would be impossible to properly conduct our automobile accessory department without 'The Red Directory.'"**

*Welker*

THE HARDWARE & SUPPLY CO.,  
AKRON, OHIO

**"It Hangs  
Everywhere"**



**You can't afford to stock all styles of rear view mirrors any more than Mr. Welker's Company can.**

**The fact that all the manufacturers of these devices are shown in "The Red Directory," makes it possible to buy to the best advantage.**

**Some of the manufacturers give styles, specifications and prices—all the information you need to close a sale.**

THE AUTOMOBILE TRADE DIRECTORY  
ROBERT WOLFERS, President  
243 WEST 39th STREET, NEW YORK CITY

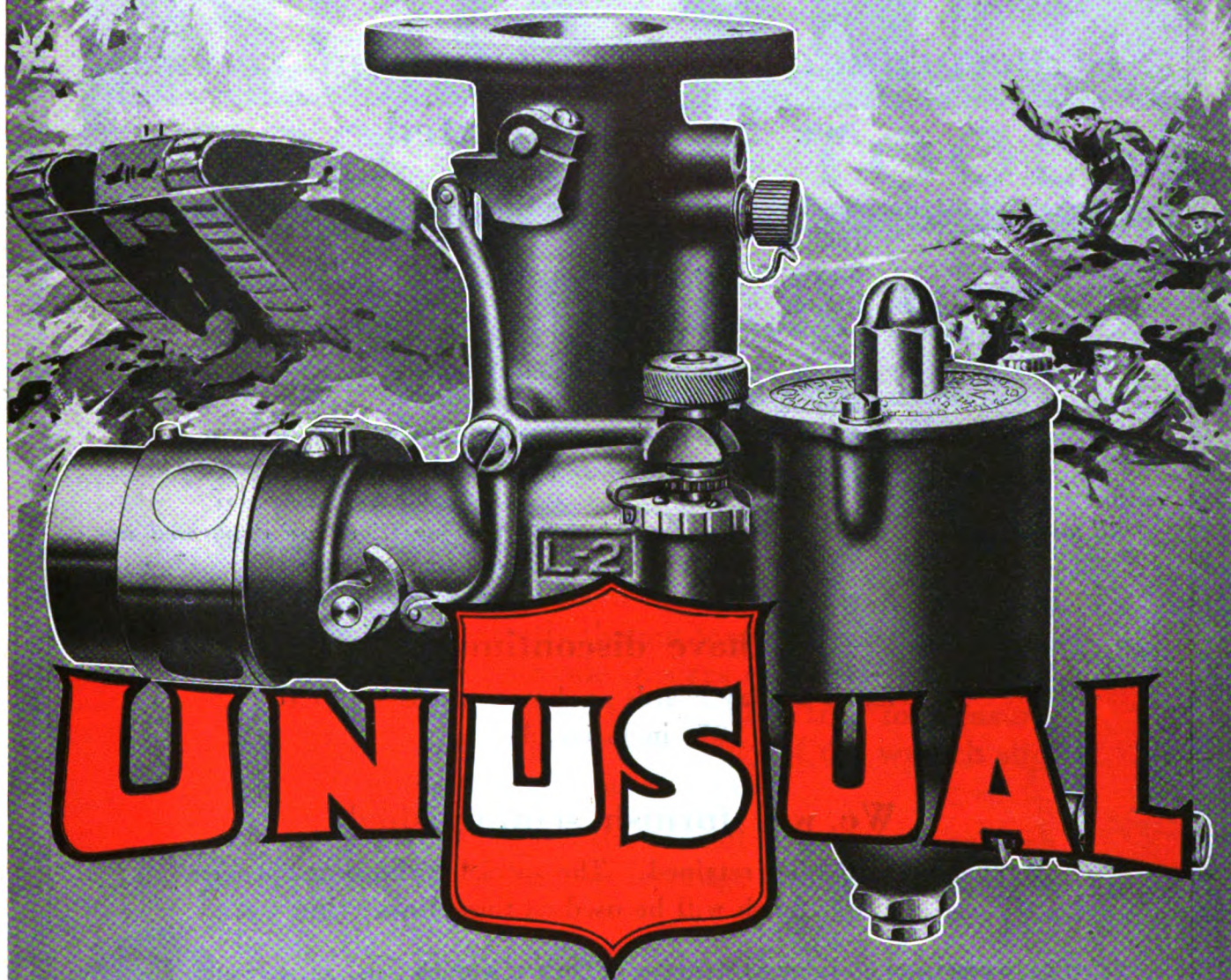
**A THOUSAND CATALOGS IN ONE**



**T**HE Economy of the New Stromberg Carburetor is not a "hair breadth" matter. It represents a saving of real importance—to the purse of the motorist and to successful conduct of war activities that call for strict conservation.

*For particulars send name, model and year of your car*

**Stromberg Motor Devices Co. :: 64 E. 25th St., Chicago**



# UNUSUAL

## ECONOMY

### THE KIND THE U.S. NEEDS

**New STROMBERG Does it!**  
**CARBURETOR**





# War Announcement

*In accordance with government request  
we have eliminated*

		Cat. Pages
No. 1204 line	Single End for Heavy Hex Head Cap Screws . . .	63
" 1253 "	Double " " " " " " " " . . .	65
" 1200S "	Single " " " Square " " " " . . .	62
" 1250S "	Double " " " " " " " " . . .	64
" 1550 "	22½° Textile U. S. S. & Cap Screw Sizes . . .	71
" 1750 "	Single End Long Flat Handle Wrenches . . .	76
" 1775 "	Double " " " " " " " " . . .	76
" 801 "	Automobile Double Opening & Socket Wrenches . . .	86
" 810 "	Spark Plug Wrenches . . . . .	86

*All milled openings which have been furnished in the above lines are duplicated in engineers' lines, which we will continue to manufacture*

## We have discontinued

All wrench display boards as shown on pages 120 to 137, inclusive, but

## We will furnish semi-finished

Wrenches of all lines retained. The special Billings & Spencer war finish will be used on these lines

Referring to pages 5 to 10, inclusive, illustrating models 97—"A"—"B"—"C"—"D"—"E" and "G", also combination pliers, shown on page 13, these will be furnished in black finish only.

Socket wrench sets, as shown on pages 31 to 35, will be furnished with semi-finished handle.

The above provisions are, of course, for the duration of the war only. We shall be glad to furnish the new 34th edition of the Billings & Spencer catalog to all who may be interested.

**THE BILLINGS  
& SPENCER CO.   
HARTFORD, CONN. U.S.A.**

# GOODELL PRATT

## 1500 GOOD TOOLS

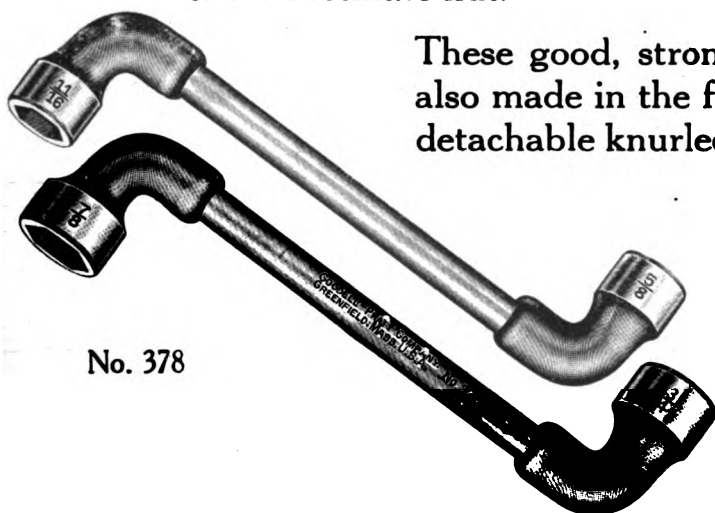
### SOCKET WRENCH SETS

Goodell-Pratt Socket Wrenches are indispensable in a public or private garage. The ease with which usually inaccessible nuts can be reached and removed or replaced is a revelation to new users and a constant source of gratification to old users.

The sockets are made from malleable iron, machined to exact size to fit perfectly the nut for which the socket was intended. They are made in sizes of  $11/16$ ,  $5/8$ ,  $3/4$  and  $7/8$  inch between flats and are absolutely true to measure, which does away with the possibility of the wrench slipping and ruining both nut and wrench.

The handles are steel and the overall length of the wrench is  $8\frac{1}{4}$  inches, which allows leverage enough to start the most obstinate nut.

These good, strong, accurate wrenches are also made in the form of four sockets and a detachable knurled handle.



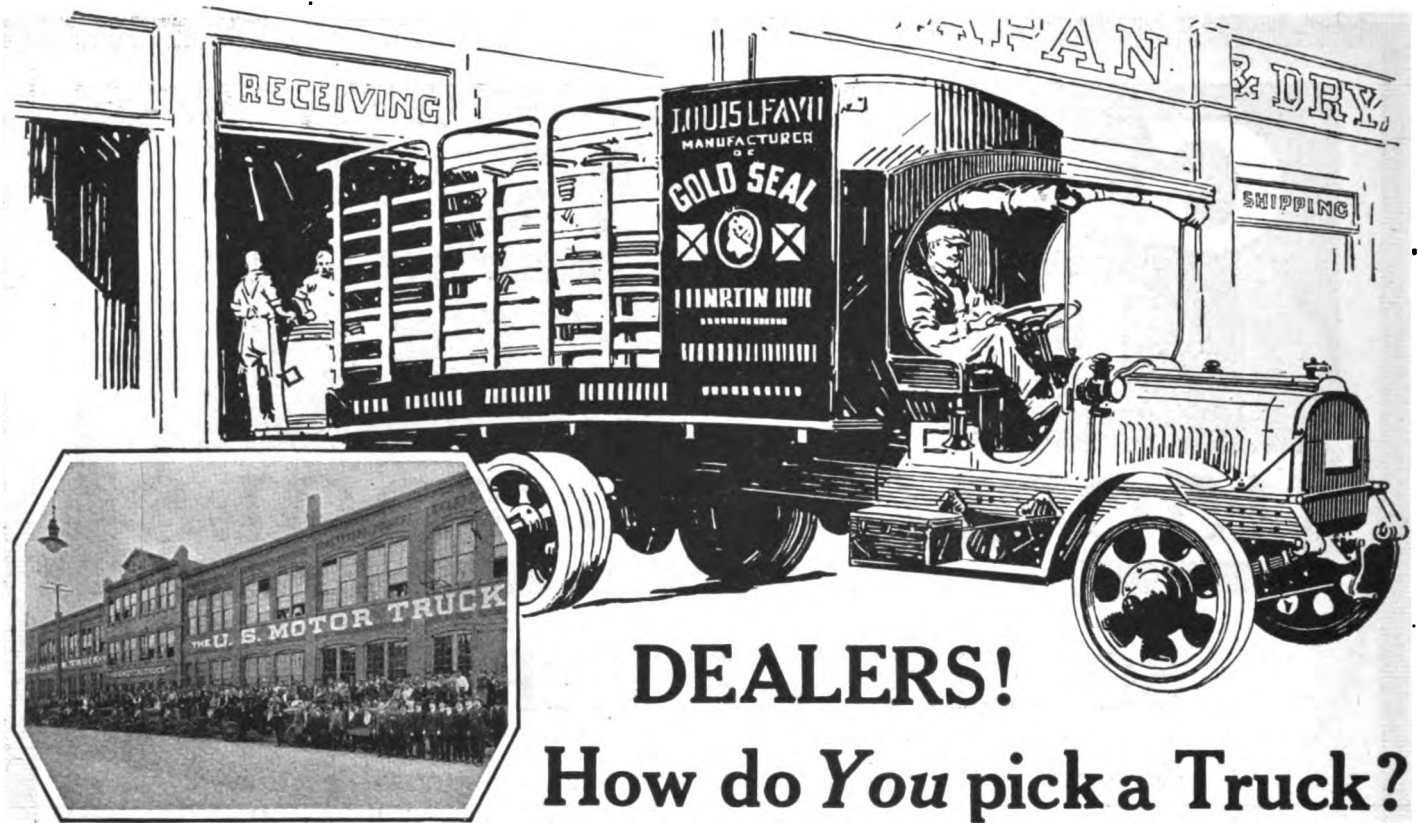
No. 378

**Goodell-Pratt Company**

*Toolsmiths*

Greenfield, Massachusetts  
U. S. A.





## DEALERS!

### How do You pick a Truck?

**P**ICKING the right motor truck means more than merely examining its mechanical excellence. You must go farther than that—you must be sure of the producing organization.

From the mechanical side and from the producing side the U. S. line answers in your favor every question that is vital to your success.

Mechanically, you know the U. S. is trustworthy—our nine years' production and five-fold increase in our factory last year attests that.

Financially, the United States Motor Truck Company is unassailable. You can be sure of continued production no matter what the conditions. Your customers will never be left with "orphan trucks" on their hands.

Mechanically, the U. S. has many exclusive features that offer a wealth of selling material. Mind you, these are not extremes of design or created "selling points," but every one is there because it means longer running time and lower operating costs. They put the truck head and shoulders above many that you will have to compete with.

Here is the liveliest proposition in America today. Perhaps you may be fortunate enough to get the selling franchise in your territory.

*Write or wire today—or better still get on a train and look the U. S. over "first hand."*



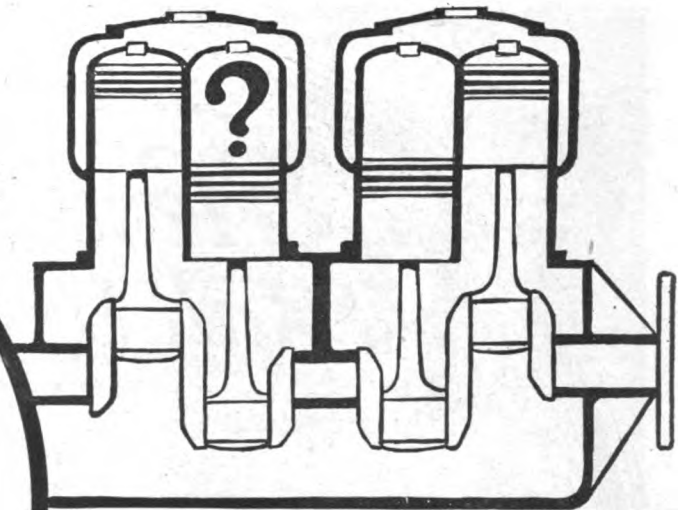
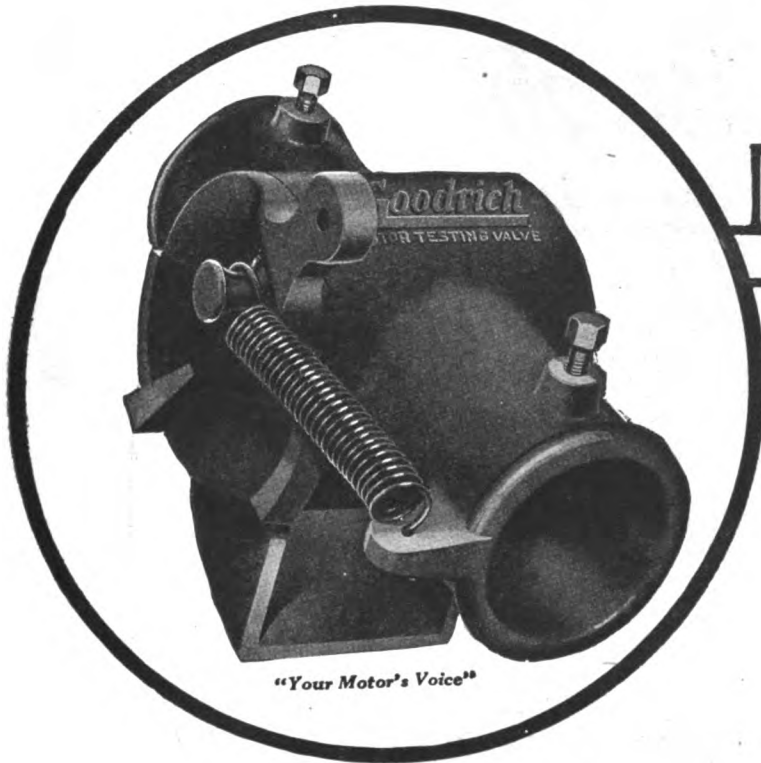
Worm Drive 2½, 3½ and 5 tons  
Chain Drive 2½ and 3½ tons

**The United States Motor Truck Co.**  
CINCINNATI, OHIO

# U.S. MOTOR TRUCKS

When writing advertisers please mention Motor World—it identifies you





## Have You a Slacker Cylinder?

### Note These Special Advantages:

1. The sharp edge of its revolving shutter prevents the formation of carbon inside the valve and insures quick, easy, certain action—*always*. No "sticking" or slowing up.
2. The simplicity of construction—only 1 moving part—it is both indestructible and trouble-proof.
3. The scientific design is far in advance of old-style cut-out devices.
4. The wide, bell-shaped mouth and direct channel, assures a loud, clear tone easily heard above other noises, and gives full relief from back-pressure.
5. Careful construction, quality material, no adjustments ever necessary. Self-contained, self-cared-for. Guaranteed for the life of the car.

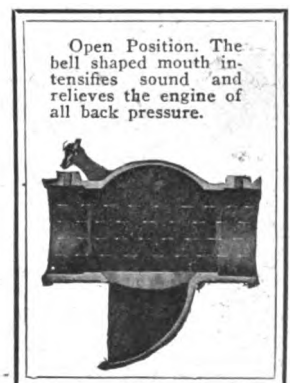
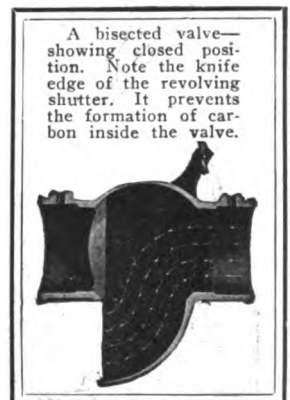
**L**ISTEN to "*your motor's voice.*" It will tell you. And tell you *in time!*

The GOODRICH MOTOR TESTING VALVE is the "best little trouble-teller" you can buy. If there's anything wrong with your engine it will let you know it instantly and positively. It never "sticks," or works sluggishly, or stands half-open.

There are reasons why the GOODRICH MOTOR TESTING VALVE is guaranteed to remain in good order for the life of your car.

### Made in All Sizes for All Makes of Cars

**DEALERS:** If you are not handling the GOODRICH MOTOR TESTING VALVE you are not getting your share of sales on this already famous cut-out, or cashing in on the demand created by our advertising. Hundreds of Dealers everywhere are enthusiastic over the Goodrich Proposition. Have us tell you why—write today!



## GOODRICH-LENHART MFG. CO.

418 WIDENER BUILDING

PHILADELPHIA, PA.

Members of the National Association of Automobile Accessory Jobbers

# Goodrich

MOTOR TESTING VALVE

(replaces old style cutout)



# Hess-Bright Ball Bearings

## *When you buy a really good truck—*

you will probably get one equipped with Hess-Bright Ball Bearings for it is as true of trucks as passenger cars—the best makes use them.

For their quality is a definite thing—established by years of service. The little difference in first cost is lost in the value of the service rendered and that

service is a real thing because of the manner of their making.

When you buy Hess-Brights you add an asset to your business. For weeks and months, in and out, they will do their work without failure. They will maintain their reputation in your service.

THE HESS-BRIGHT MANUFACTURING COMPANY

## *Where Performance takes Preference over Price*

When writing advertisers please mention Motor World—it identifies you



## Safe—Because It Can Be Tested

—and that makes it a big seller.

You can sell Norwesco "TWELVE-TWENTY" in the full confidence that it represents the last word in non-freeze solutions. It is absolutely *safe* and *sure*—prevents frozen radiators to 20° below zero.

And the motorist *can test it* with an ordinary battery hydrometer—can *prove* that his radiator *is safe* from freezing. That means confidence in

### NORWESCO TWELVE-TWENTY PREVENTS FROZEN RADIATORS

And it means big sales for *you*.

"TWELVE-TWENTY" has none of the drawbacks of so many anti-freezing solutions. Does not "find" leaks. No complaints about evaporation—has a boiling point 12° higher than water. No mixing—no dissolving—pour it right out of the can into the radiator.

Such a non-freeze sells itself. And because the motorist can *test* it there are never any comebacks.

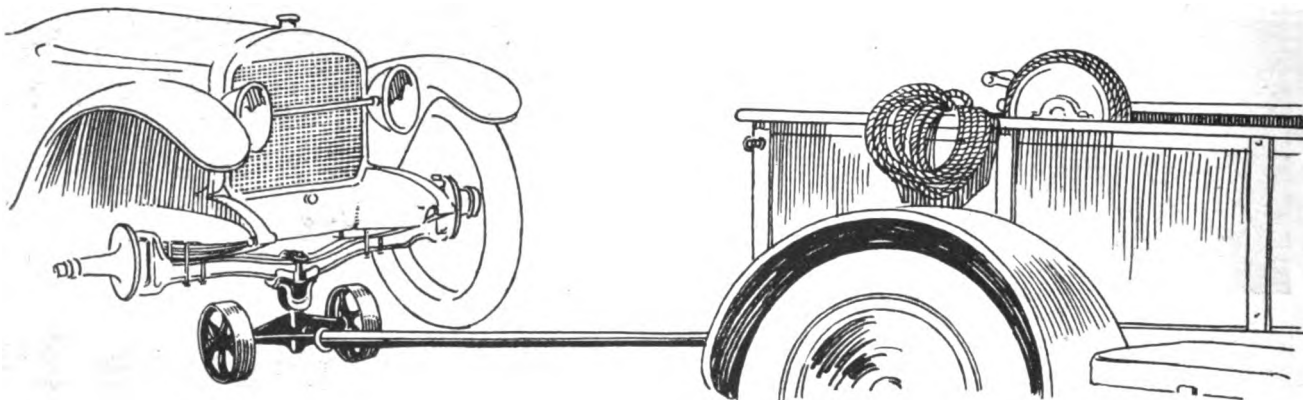
If you are already handling "TWELVE-TWENTY," send us your name and address and your jobber's name so that all mail order inquiries can be forwarded to you. If you are not yet carrying it, write today for our Dealer's Proposition. Be sure to give your jobber's name.

**The Northwestern Chemical Co.**  
429 State Street MARIETTA, OHIO, U. S. A.

Remember: "TWELVE-TWENTY" is backed by a great advertising drive in the Saturday Evening Post.



# TOW PROFITS



## Into Your Repairshop with a **WEAVER** AUTO AMBULANCE

**E**IGHT or ten mile tows are rather common and they represent big profits for the garageman. The Weaver Auto Ambulance enables the garage to furnish tow service with such surprising efficiency that customers are highly pleased. It is made to give absolute satisfaction *all* the time.

As a matter of fact, the Weaver Auto Ambulance should be included in the equipment of any well ordered, progressive garage. It is an essential to garage efficiency of the kind that builds up

new business and holds old business.

The Weaver Auto Ambulance advertises the fact that the garage is equipped to handle repair work in a highly efficient, quick manner. It indicates the ability of a garage to handle the trade and handle it right.

It's easy to operate, it's never out of order

and it's always ready at any time.

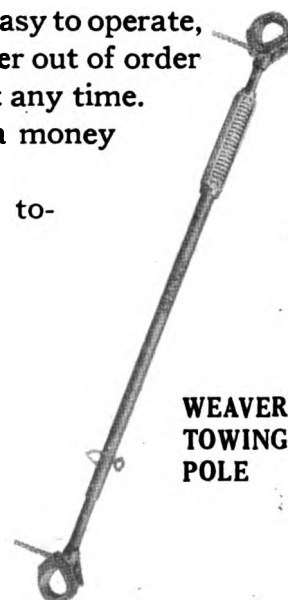
It's a time saver and a money maker for any garage.

Write for a catalog today—it's *free*.

# WEAVER

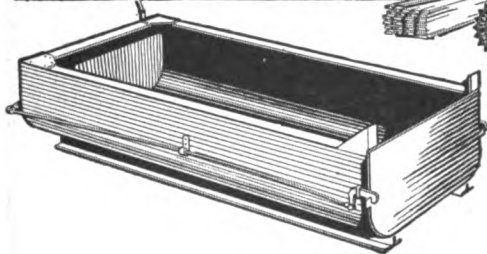
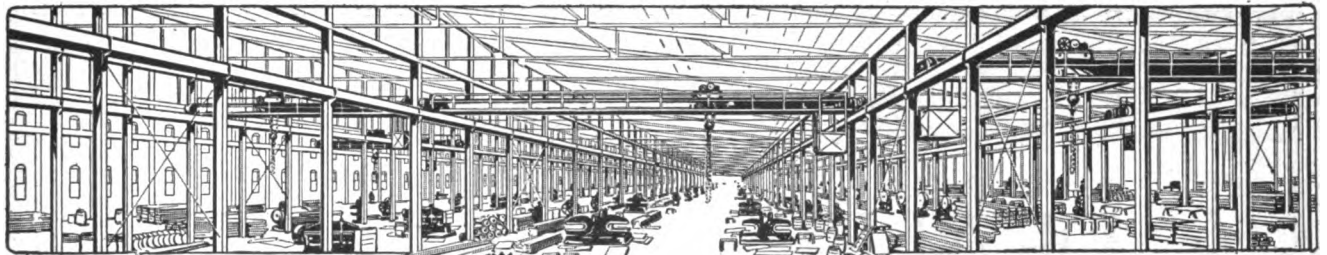
## GARAGE EQUIPMENT

**WEAVER MANUFACTURING CO.**  
SPRINGFIELD ILLINOIS



**WEAVER  
TOWING  
POLE**





The answer to the nation's problem of haulage is in the large scale production of haulage equipment.

Standardization of motor truck body production as it has been done in the "K & J" Plant has afforded the body buyer four great advantages:

First—Bodies that are uniformly good both in design and construction.

Second — Economical production costs due to the large volume of bodies produced.

Third—Assurance of prompt deliveries due to our big facilities and accurately scheduled, routine production.

Fourth—A wide range of choice due to the breadth of our standard line.

Shop No. 33

of the

Huge Structural Plant of

**The Kilbourne & Jacobs  
Mfg. Co.**

Builders of

**"K & J" Standardized Steel  
Motor Truck Bodies**

"K & J" Standardized Steel Bodies fit any standard heavy service truck from 2 to 6 ton capacity. Both side and end-dumping bodies are made as well as platform bodies.

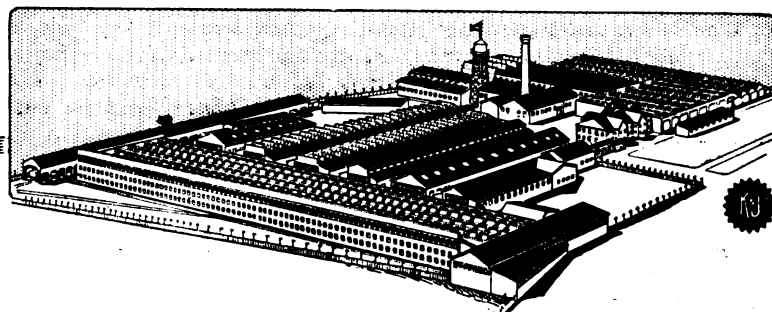
Collapsibility and nesting features of design make "K & J" Standardized Bodies very economical to ship and store.

Let us give you further details.

**The Kilbourne & Jacobs Mfg. Co.**  
Columbus, Ohio, U. S. A.

New York Offices  
25 Broad St.

London Offices  
Broad Street House  
New Broad St. E. C.



When writing advertisers please mention Motor World—it identifies you

## *Announcement for* **DEALERS & GARAGE OWNERS**

**T**HE October 16 issue of Motor World will be the annual Winter Business number. It will be a text book, a veritable encyclopedia for merchandise and maintenance men who are planning to operate their establishments to the point of highest profit advantage during the forthcoming winter months.

The changes in your business that have been made necessary, and other changes that will be necessary, in consequence of war conditions, will be fully set forth.

It will show you how to meet and beat down winter resistance, and how to make the coming season one of special profit.

Motor World's Winter Business number is a big idea—carried out in a big way, for those who are anxious to meet and profit by opportunity.

A big percentage of the best dealers and garage owners throughout the United States are already subscribers to Motor World, but we want *every* non-subscribing tradesman as a member of the family.

Motor World is published weekly—two dollars per year—52 regular and special issues. Every issue is for the exclusive advantage of those who sell and maintain all products of the automotive industry—trucks, tractors, cars, farm lighting systems, accessories and supplies.

Send your order at once, enclose two dollars, get started with the big Winter Business number—out October 16. Address:



239 West 39th Street, New York City

*In Motor World the industry possesses a unique medium because it covers the trade with unusual thoroughness, at frequent intervals, and at a cost that means real economy in effective advertising. The Motor World audience is 100 per cent interested. There is no waste circulation. Its readers have come to depend upon Motor World for authoritative information, education and guidance.*



## Let the Car Washers Stick to War Work

CAR owners average high in patriotism. Even if garages could supply labor for such a non-essential as car-washing, their customers would not want them to.

But the owners *do* want to keep their cars looking fresh and spruce. With MISTOKLEEN they can "dry-clean" their own cars and enjoy doing it.

To see the dirt disappear from a MISTOKLEENED car, and to see how MISTOKLEENING brings back the lustre, is a real satisfaction.

And every application postpones repainting, because it preserves the varnish. That's a bigger selling point than ever in these days of true economy.

MISTOKLEEN is a special blend of the most select ingredients, non-combustible, non-inflammable and non-poisonous. It will make good all your selling claims. It saves money, protects the car, releases labor, is clean and easy to use. No wonder it sells!

# MISTOKLEEN

Trade Mark Reg.

Stock a dozen cans, put them in the window, and see how fast they go. Good dealer helps to get attention and keep things moving.



**CREW LEVICK COMPANY, 105 NORTH BROAD STREET, PHILADELPHIA**

Subsidiary Cities Service Company

Branches: New York . Chicago . San Francisco . Baltimore . Boston

One of the Oldest and Largest Producers and Refiners of Oil and Manufacturers of Petroleum Products.

ESTABLISHED IN 1862

CREW LEVICK

as old as the industry

When writing advertisers please mention Motor World—it identifies you



# Electricity and the Motor Car

## *First there had to be a satisfactory lamp*

Electric light was the first demand of the motorist—so it came first. But the first lamps were not entirely practical. To make them so, Willard, at the very start, co-operated with other manufacturers in developing a lamp with mechanical strength, brilliance and ability to serve well with small battery capacity.

## *Then an entirely different battery had to be produced*

Vehicle batteries first used were efficient and capable, but too big and heavy for the motor car where lightness and compactness were first requirements. Willard engineers developed a durable, capable battery that took little room. They showed how six- and twelve-volt systems lessened battery weight—increased efficiency.

## *Means for charging had to be provided*

Imagine the gasoline car owner buying electricity every day or two just as he buys gas. Possible, of course, but inconvenient. Again Willard aided—in helping to perfect generator regulation so that the battery would be properly charged at different car speeds.

## *Then electric starting became possible*

There had to be a motor to replace strong-arm cranking. Power, staunchness and reliability were essential, and current demand had to be small. Willard's long experience in battery manufacture enabled them to give valuable aid to builders of motors for this particular job.

## *Battery ignition a by-product*

The almost universal use of battery ignition is a great tribute to the dependability of Willard Batteries which makes it unnecessary to carry dry batteries or to depend on a magneto. Current for this purpose is, of course, small—but must be infallible; for ignition failure means a dead engine. High battery reliability is maintained by close attention to every detail of work done at the Willard factory.

## *The Battery is the living link in the system*

Every other part of the electrical system is dead except when the engine is running. It's the battery that starts things moving and keeps them going. So great is the importance of this living link that the Willard organization has never been satisfied to make the best battery, but has added one improvement after another.

## *Threaded Rubber Insulation; the latest contribution to car owners*

No electrical system is any better than the insulation that stands guard over the life-giving plate. All battery engineers had long realized this and it had been their dream for years to use rubber because of its great durability.

It is because Willard never lost sight of their goal—practical rubber insulation—that we have today Threaded Rubber Insulation—the one form that can be used without increasing battery size or decreasing voltage. And Threaded Rubber Insulation has done more than to make the battery better and longer lived, for it has made possible Bone-Dry shipment of batteries, which protects the buyer against getting a battery not in every sense brand new, and against having to wait for his battery after he has bought it.

*Willard Service.*



# Firestone

## Blow-Out Patch

**T**HE Firestone blow-out patch performs both duties, holds the blow-out securely and protects the inner tube while in the casing.

Built of six plies of rubberized fabric, it is flexible and yielding. It is protected at both ends by a molded-in real rubber tip, originated by Firestone, which does not allow the tube to come in contact with the raw, rough edges of the fabric. It is wide enough to extend from bead to bead. It is curved to fit snugly the inside dimensions of the case and cannot buckle, see illustration.

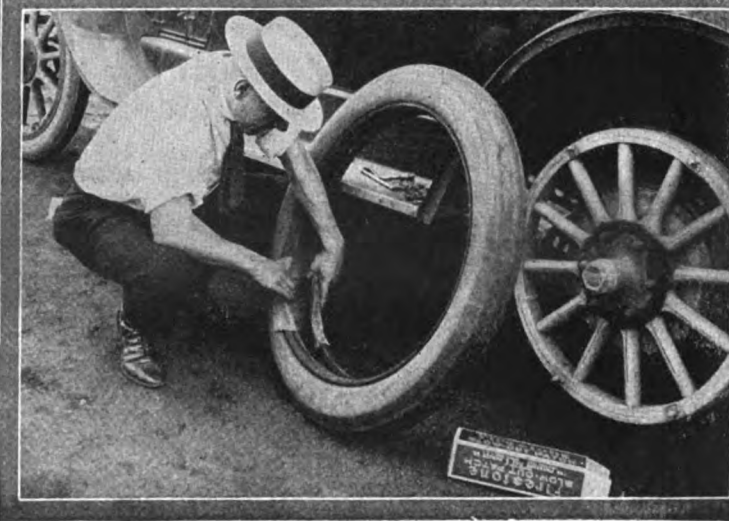
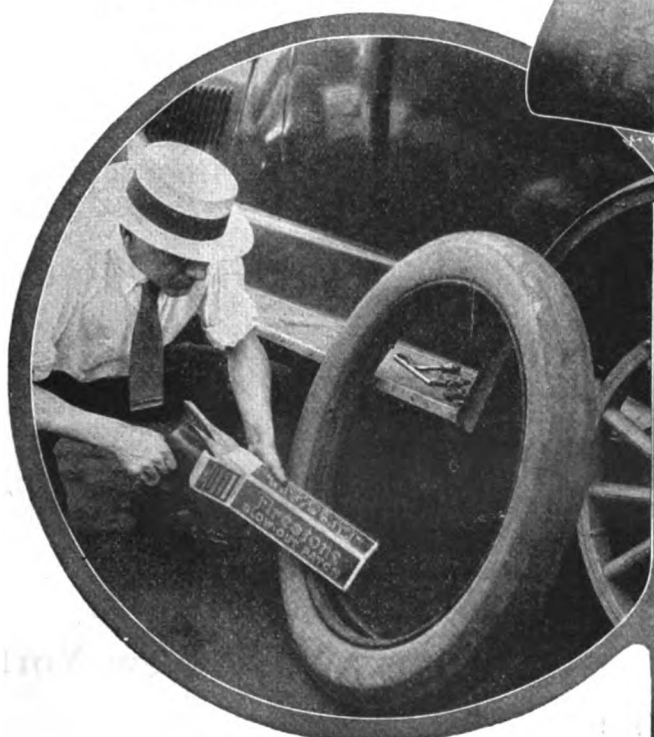
Authoritative figures show that one in every four car owners prefer Firestone blow-out patches. Firestone will make 5 million of the 20 million to be sold this year.

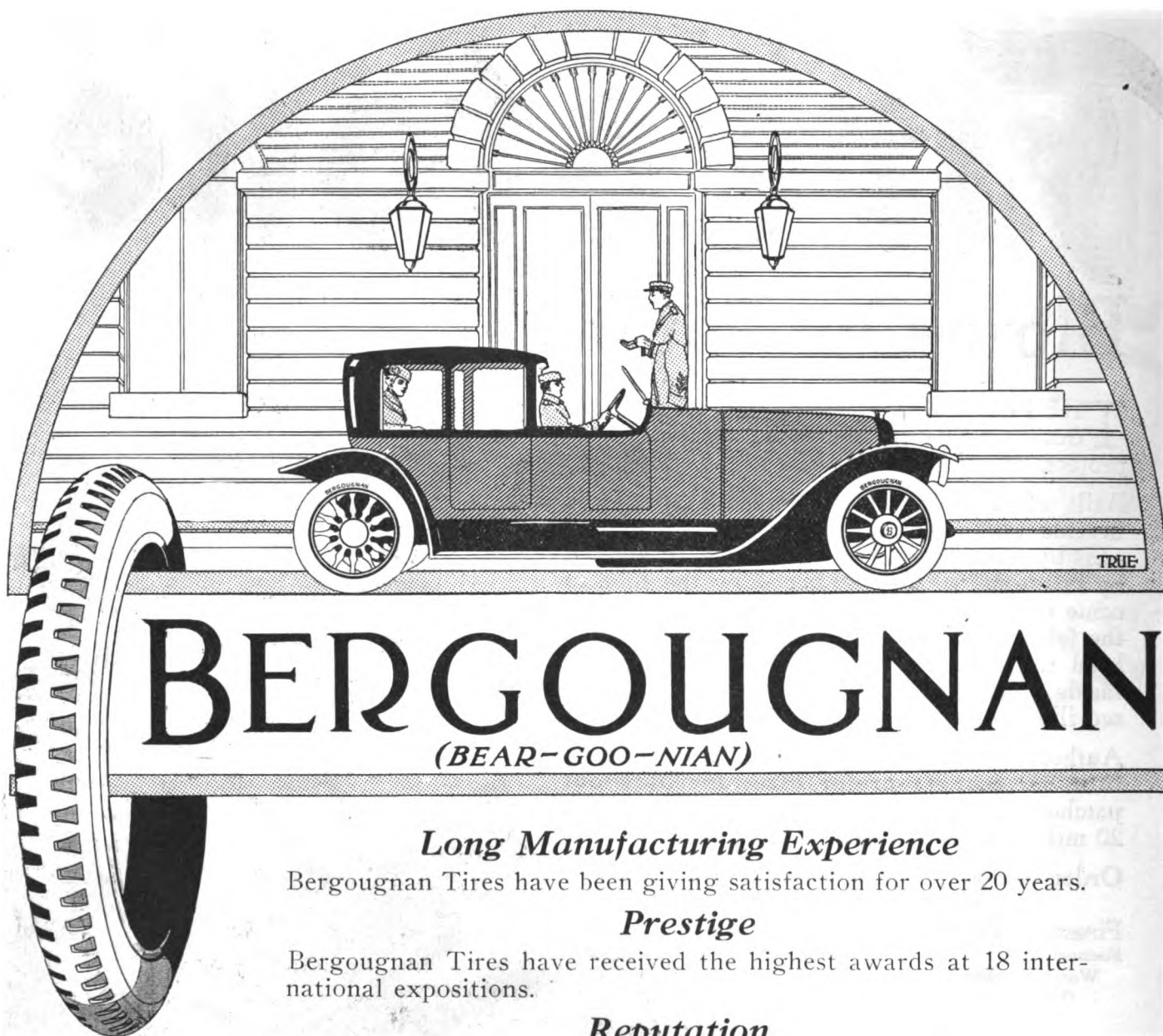
Order through your jobber or direct.

Firestone Tire and Rubber Co.

Firestone Park Akron, Ohio

World's Largest Manufacturers of Tire  
Accessories and Repair Materials





# BERGOUNGNAN

(BEAR-GOO-NIAN)

## *Long Manufacturing Experience*

Bergougnan Tires have been giving satisfaction for over 20 years.

## *Prestige*

Bergougnan Tires have received the highest awards at 18 international expositions.

## *Reputation*

Bergougnan Tires occupy a preferred position in the eyes of the Transport Department of the French Army.

**BUY**

**L  
I  
B  
E  
R  
T  
Y**

Tie up with that sort of a tire and sell good-will at the same time that you are selling rubber.

We have exclusive territory to allot on very attractive terms. Write us today, the time is growing short.

***Bergougnan Tires offer the greatest guarantee of perfect service***

We guarantee them for 5000 miles, but they frequently render twice this mileage.

**BERGOUNGNAN TIRE CORPORATION**

49 West 64th Street

New York

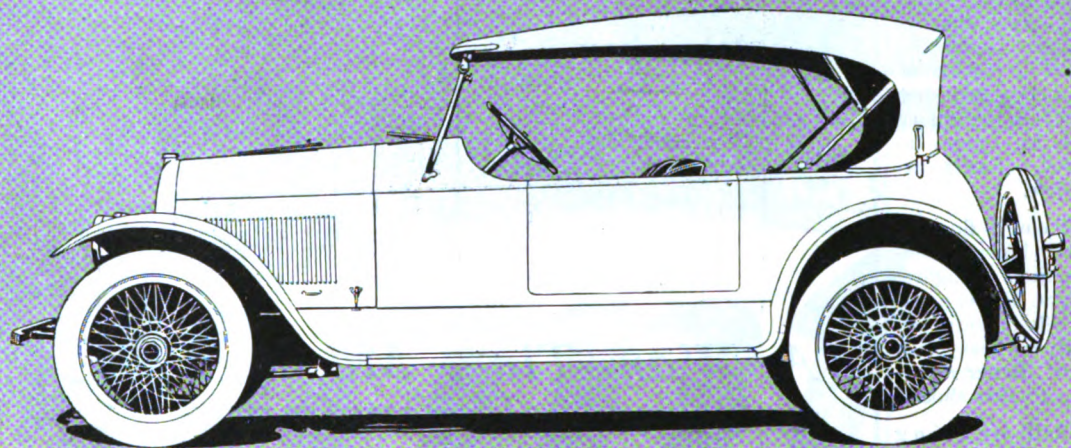
Canadian Agency: 32J St. James Street, Montreal

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**BONDS**



*The New*  
**KISSEL**  
*Custom-Built*  
**Six**



*Kissel Silver Special—4-passenger Tourster*

**W**ARTIME economy prompted us to concentrate on this strictly CUSTOM-BUILT SIX—incorporating advanced ideas in chassis construction, body building and mechanical excellence.

A composite in body design, of those unique and distinctive features which mark and set apart the custom-built job for which you are accustomed to pay thousands of dollars.

It is replete with those features that combine efficiency in performance with economy of operation—wartime service essentials that mean everything to the man who drives his own car.

Three models—4-passenger Tourster (above) 7-passenger Touring and 4-passenger Speedster. Literature on request.

KISSEL MOTOR CAR CO., HARTFORD, WIS., U. S. A.

*The*  
**ALL-YEAR**  
*Car*



### THE SHELDON Worm-Gear AXLE at every point is BETTER

1—An enormously strong, annealed, one-piece housing. No parts to jar loose. Maximum strength, maximum protection of working parts.

2—Straight or David Brown Type worm. Simplest and best for silence and durability. Heat-treated to wear-proof hardness.

3—Ultra-efficient brakes. Double internal expanding. Easily adjusted. Generous bearing surfaces. Doubly inclosed. Easily accessible.

4—Semi-floating wheel bearing construction. Lighter weight. Fewer parts. Wheels mounted directly on heavy axle shaft. Better resistance to side shocks.

5—Ball-bearing construction throughout. Less friction. Adjustment unnecessary. Greater load capacity for size of bearings. Floating annular bearing compensates for elongation of worm.

6—Wheel bearings inclosed in main axle housing. Protects from grit. Easily accessible by removal of wheel. Simplifies demountability of wheels.

7—Differentials never break. Teeth broad at base instead of concave. Each bevel gear supported at both ends. Hexagonal insertion of axle shaft in bevel gear.

8—Big, husky axle shaft.  $3\frac{1}{2}$  per cent nickel steel forging. Expertly heat-treated, ground to size. Tapered for uniform distribution of strain.



## A War-Time Message to Owners, Foremen and Drivers of Motor Trucks

THE true gauge of a motor truck's value is the length of time it remains in service—without interruption for repairs and overhauling.

Some part of this value—and no small part, either—depends on the owner, or on his foreman, or his driver. A  $2\frac{1}{2}$ -ton truck, however sturdy its construction, will eventually rebel if made to perform the office of a  $3\frac{1}{2}$ -ton truck. *Someone* pays the penalty of overloading—pays it by frequent visits to the repair shop, or (if persisted in) by ultimate relegation to the scrap heap.

### Your Truck Will Carry Its Rated Load Easily

A Sheldon-equipped truck will carry its rated load, with something to spare. But that Something to Spare is a margin of security which should not be persistently trespassed upon. Safety requires that a

truck, like a bridge, should have a capacity *beyond* the load it is built to sustain, to avoid undue strain.

### Don't Cut Into That Factor of Safety

Now, when you continually overload—when you constantly cut into that factor of safety—you have no margin left to *protect the truck parts against fracture* when bad road conditions are encountered. Better to take two trips than put a 7-ton load on a  $3\frac{1}{2}$ -ton truck. Or still better, purchase trucks of the *right capacity* for your hauling requirements.

We will be glad to give you specific data on your own problems.

### SHELDON AXLE & SPRING CO.

Makers of axles and springs for heavy duty service for more than 50 years.

WILKES-BARRE

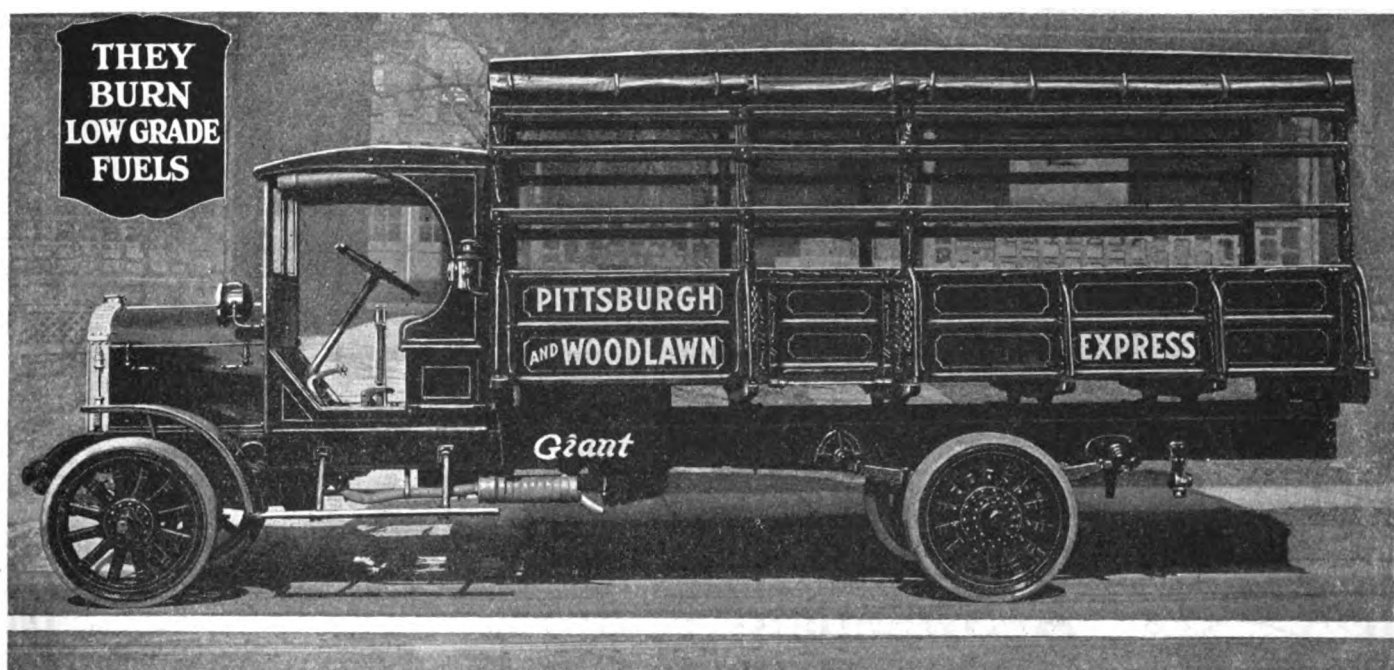
PENNA.

# SHELDON

## Worm Gear Axles

When writing advertisers please mention Motor World—it identifies you





FIRST TO BURN LOW GRADE FUELS

# Giant TRUCKS

The demand for motor trucks is amazing. The government has declared motor trucks essential to the winning of the war. Tradesmen must have motor trucks—both for economy and man-power reasons.

Dealers must increase their volume. Passenger car dealers must turn to trucks or take a loss.

Giant Trucks are the real money-making proposition in the truck field. They have what no other truck has—an exclusive feature that makes them

#### First to Burn Low Grade Fuels.

Giant Trucks attain full power on low gravity gasoline or mixtures of kerosene or distillate

with gasoline. By burning low grade fuels Giant Trucks reduce fuel costs as much as 50 per cent.

Our dealer proposition is liberal, protective and written to make you money.

Write or wire today for complete information. Territory is being closed rapidly.

Giant Trucks are Timken worm-drive-Continental motor and highest standardization throughout. Giant Trucks have the power that hauls.

Built for every hauling need in 1, 2 and 3½ ton models.

CHICAGO PNEUMATIC TOOL COMPANY

1020 Fisher Bldg., Chicago, Ill.

FIRST TO BURN LOW GRADE FUELS

When writing advertisers please mention Motor World—it identifies you

# Akron-Williams

## Tire Repair Equipment

Developed by the Leading Tire Engineers



### A Sweeping Endorsement by the Tire Industry



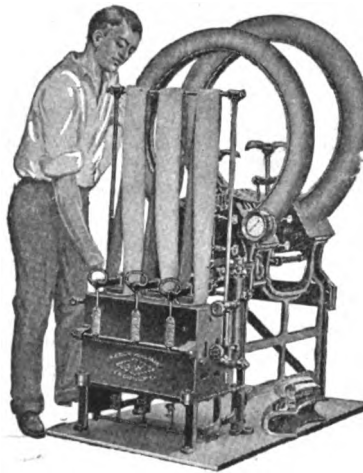
More than one hundred tire companies—including all of the recognized leaders—use Akron-Williams equipment in their own factories, and recommend and sell these outfits to their dealers all over the world.

No other tire repair equipment is so universally used and endorsed, because no other equipment equals Akron-Williams in the quality and rapidity of its repair work.

Why accept any tire repair equipment short of Akron-Williams?

Below is a partial list of these companies:

Acme Rubber Mfg. Co.  
Ajax Rubber Co.  
The American Tire & Rubber Co.  
The Bucyrus Rubber Company  
The Combination Rubber Mfg. Co.  
The Dayton Rubber Mfg. Co.  
The Diamond Rubber Co.  
The Dunlop Tire & Rubber Goods Co., Ltd.  
East Palestine Rubber Co.  
Empire Tire & Rubber Co.  
Endurance Tire & Rubber Co.  
The Falls Rubber Co.  
Federal Rubber Co.  
The Firestone Tire & Rubber Co.  
The Fisk Rubber Co.  
The General Tire & Rubber Co.  
The Goodyear Tire & Rubber Co.  
The B. F. Goodrich Co.  
Hamilton Rubber Mfg. Co.  
Hood Tire Co.  
Indiana Rubber & Insulated Wire Co.



Kelly-Springfield Tire Company  
The Knight Tire & Rubber Company  
Lee Tire & Rubber Company  
The Mansfield Tire & Rubber Co.  
The Marathon Tire & Rubber Co.  
The Miller Rubber Co.  
The McGraw Tire & Rubber Co.  
The McNaull Tire Co.  
The Mohawk Rubber Co.  
National Tire & Rubber Co.  
Pennsylvania Rubber Co.  
Perfection Tire & Rubber Co.  
The Portage Rubber Co.  
The Racine Rubber Co.  
Republic Rubber Corp.  
The Rubber Products Co.  
The Southern Tire & Rubber Co.  
The Standard Tire & Rubber Mfg. Co.  
The Swinehart Tire & Rubber Co.  
The Ten Broeck Tyre Co.  
The United States Tire Co.  
The Victor Rubber Co.

### We Can Now Ship Promptly

We have recently completed a large three-story building devoted wholly to the manufacture of equipment for repairing tires and tubes, nearly tripling our capacity and enabling us for the first time in years to ensure practically immediate shipment on all orders.

With less new tires being made, more old tires must be repaired—add Tire Repairing to your business and ensure a steady return of profits.

Send for Catalog and Prices

**The Williams Foundry & Machine Company**  
Buchtel Street, Akron, Ohio

Exclusive distributors for California: The Waterhouse and Lester Company, San Francisco, Oakland and Los Angeles

THE BLACK & DECKER MFG. CO.  
SPECIAL  
B&D  
MACHINERY  
BALTIMORE, MD. U.S.A.

THE BLACK & DECKER MFG. CO.  
SPECIAL  
B&D  
MACHINERY  
BALTIMORE, MD. U.S.A.

The smallest, most compact and most economical pump in the world—yet sturdy and powerful. Can run all day without overheating. Air cooled; grease lubricated. No water to freeze, no oil level to maintain. Never requires attention.

## You Can Get Your No. 2 Lectroflater Immediately

No. 2 Lectroflater has become the standard air pump in a very literal sense.

From all over the country came orders from owners of public and private garages, from repairmen, from tire dealers, from service stations—from everywhere.

And soon the Black & Decker plant was taxed to capacity. Still the trade continued to grow, until the orders far exceeded the output.

There was only one solution—a new factory.

It was built, accordingly; a big one, with ample space, ample facilities and a sufficient corps of workers to insure immediate deliveries.

Now whoever wants a No. 2 Lectroflater can have it as soon as his order is received. We're building up a surplus stock, so that nobody will be kept waiting.

That means that *everybody* can have cool, clean, dry air for his tires. It means that you can conduct a free air service in connection with your business—at

a cost of one-tenth of a cent per tire for electric current.

(All Lectroflaters run on either D.C. or A.C. without change.)

Lectroflaters outfits cost from \$65 up. There are many styles and prices to suit every need of every garage, store and repair shop.

You will find a full description of each style in the Black & Decker catalogue. Send for it today, and choose *your* Lectroflater outfit.

**THE BLACK & DECKER MFG. CO.**

107½ South Street, Baltimore, Md.

Makers of the famous B & D Portable Electric Drill

New York—Jordan Equipment Co., 68 Beaver St.

Montreal, Canada—Northern Electric Company

London, England—R. A. Rothermel, 18 Poland St., Gt. Marlboro.

# LECTROFLATER

## ELECTRIC AIR COMPRESSORS

When writing advertisers please mention Motor World—it identifies you

# DURATEX

the finest  
and most  
practical  
substitute  
for  
leather



## for hard service—

The ideal of the Duratex Company has always been to produce the finest and most practical substitute for leather.

The skill with which we have employed our resources, experience and abilities in working out this idea is what makes Duratex the super-product of its kind.

Our original intention was to confine our activities to the production of passenger upholstery, but we soon found that the strength and durability, so essential to an upholstery material for all types of motor trucks and commercial vehicles, were the material by-products of the super-quality we set out to standardize in Duratex.

The United States War Department's tests of Duratex for use on Ambulances and Ordnance trucks establishes this fact beyond question of doubt.

Duratex is the product of the only concern which, after some fifty years' experience in the manufacture of the finest leathers, foresaw the world-need of a leather substitute and began developing it. Not only is it adapted to every purpose for which leather had previously been used, but its imperviousness to water makes it better for many special uses than the genuine.

Duratex is made in one of the largest and most modern plants of its kind and the care and pains with which every detail of its production is handled insure absolute uniformity as well as the highest quality.

THE DURATEX COMPANY Newark, N.J. *Wm. A. Kip*

President.

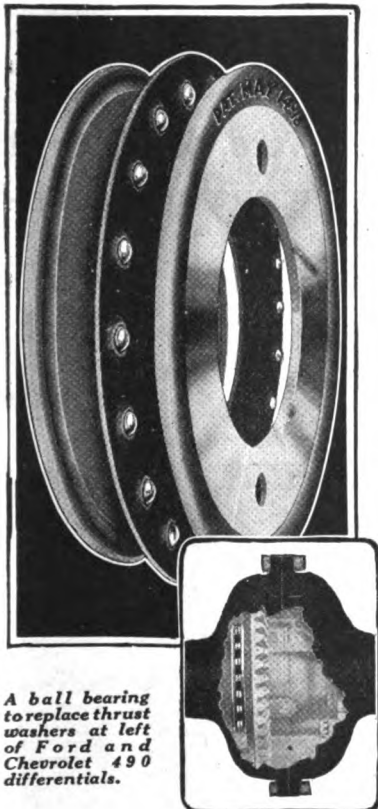


# FREE To Dealers and Repairmen

Fill in and mail the coupon below and we will send with our compliments a Thrust Washer Gauge—an indispensable shop tool to enable you to tell instantly before installing whether or not thrust washers are of correct thickness. Mail the coupon.

## BAILEY BALL THRUST BEARINGS

### Replace Worn Thrust Washers on Fords and Chevrolet 490s



A ball bearing to replace thrust washers at left of Ford and Chevrolet 490 differentials.

Thrust washers at left of differential have a sliding, friction producing contact—therefore wear thin and cause drive gear and pinion to get out of mesh—resulting in broken gears.

—but the Bailey Ball Thrust bearing with its rolling, frictionless contact, does not wear—hence keeps gears meshed, preventing rear axle trouble and noise. Install Bailey ball bearings instead of washers.

Washers wear thin—with these results—

- 1—The ring gear and pinion get away from the proper mesh and allow a contact of the teeth at the weakest point. Result is broken gears.
- 2—The improper meshing of gears causes humming or noise in the axle. Bailey keeps gears meshed—hence no noise or breaks.
- 3—The friction of plain washers heats the oil and grease to such an extent that

the lubrication qualities are destroyed.

- 4—The fine metal ground away in the wear of plain washers is bound to get into the other axle bearings and lessens their life and service.

- 5—When you get the heaviest thrust you get most friction—and friction means loss of power. The Bailey eliminates friction.

*Your jobber knows how well this bearing sells—ask his salesman or write us.*

## GEO. D. BAILEY CO.

Factory and General Offices:

4501 Ravenswood Avenue

CHICAGO, ILL.

Geo. D. Bailey Co., 4501 Ravenswood Ave., Chicago  
Please send me free of charge  
Name ..... gauges  
Address .....

**IMMEDIATE  
DELIVERY!**



Immediate deliveries on this 1 1/2 ton model put you in position to close with a big percentage of truck prospects in any locality. No delay. We have the trucks. The demand is greater than it has ever been—and it is growing. The market is wide-open.

Establish yourself now with the 1 1/2-ton Triangle as a dealer in automotive transportation—the fastest developing branch of the motor car industry. Eventually you will handle the complete Triangle Line of 1 1/2, 2 1/2, 3 1/2 and 5-ton models.

Deliveries on our new 2 1/2-ton model begin Oct. 1.

Now is your opportunity—today. Wire, or write at once for complete information and unusually interesting dealers' proposition.

**Specifications:**

Waukesha Motor, Eisemann Magneto, Stromberg Carburetor, Fuller Transmission, Universal Drive Shaft, Celfor Internal Gear, Rear Axle, Torbensen Front Axle, Detroit Bronze-Bushed Springs, Gemmer Steering Gear.

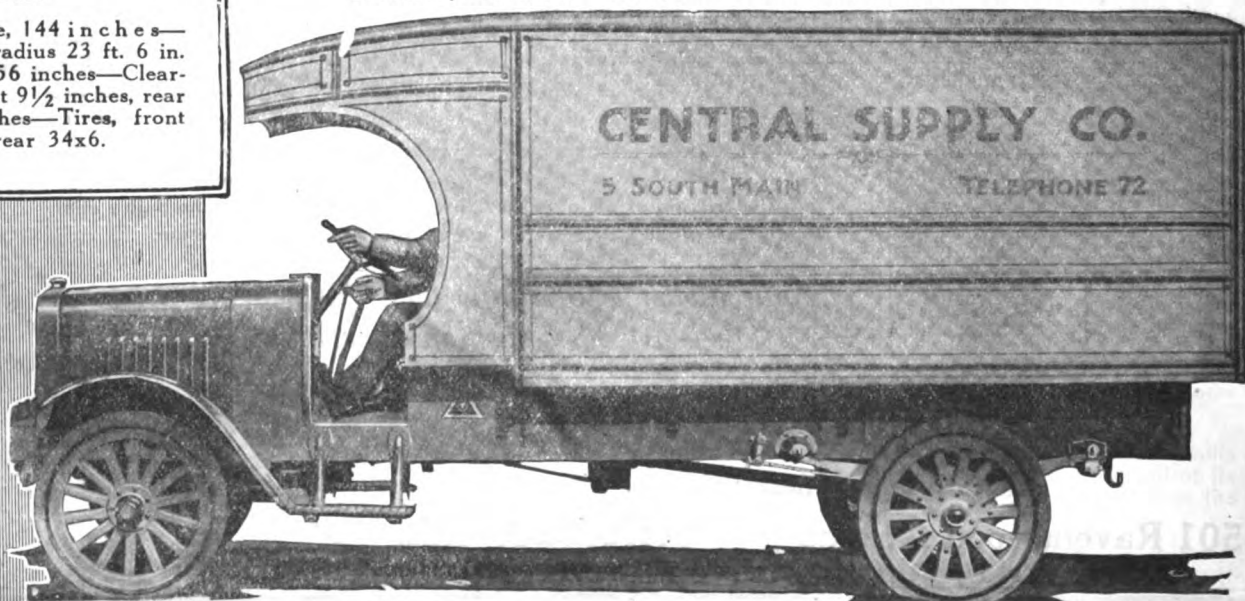
Wheelbase, 144 inches—Turning radius 23 ft. 6 in.—Tread 56 inches—Clearance, front 9 1/2 inches, rear 12 1/4 inches—Tires, front 34x3 1/2, rear 34x6.

**TRIANGLE MOTOR TRUCK CO.**

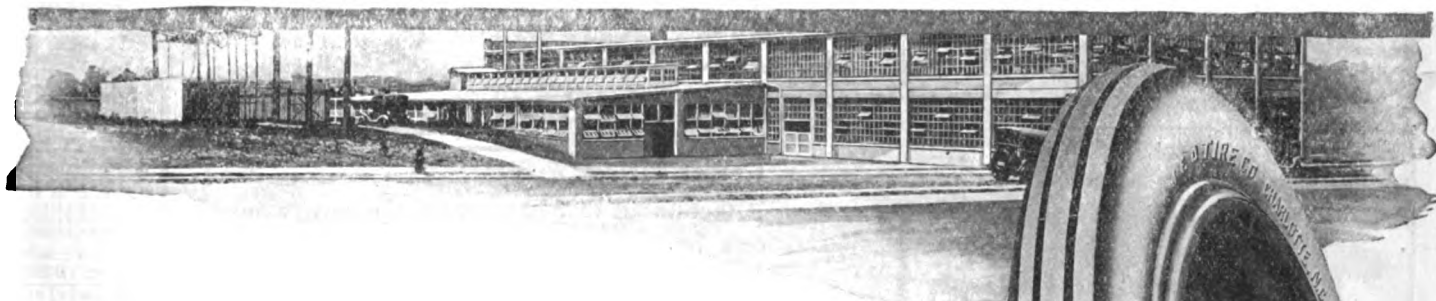
St. Johns

Michigan

Eastern Representatives: Triangle Motor Sales Co., 381 Fourth Avenue, New York City



**"5000 Miles of actual *Built-In* mileage are in every *J & D Tire* that leaves the factory. You can depend on them."**



**U**NIFORMLY good performance—adjustments reduced to a negligible minimum—toughness, strength and resiliency to resist damage from the hardest road conditions—this is what we mean by "Built-In" mileage.

By careful factory methods, supervised by men who know tire building from A to Z and who know just what they want and just how to get it—by the use of the finest carefully selected rubber and the best fabric obtainable—by confining ourselves to hand processes and avoiding short cuts—we build our dealers and customers a tire of absolutely dependable quality—a tire that shows a performance seldom equaled in the price class to which J & D Tires belong.

J & D Tires are a big value. With our exclusive agency dealer proposition they are an assurance of steady and constantly developing business to our representatives. Built-In mileage makes and keeps customers.

Our increased production capacity makes it possible for us to take on a few more dealers in unoccupied territory. Write for our proposition.

## **J & D TIRE CO.**

**CHARLOTTE,**

**NORTH CAROLINA**

New York Offices, 1834 Broadway

BETTER  
MADE  
FOR  
BETTER  
TRADE

**J&D TIRE**

WE MORE  
THAN  
5000  
MILE  
TIRE

When writing advertisers please mention Motor World—it identifies you





# MAKE ALL ROADS GOOD ROADS



**N**O NEED of setting yourself against "shocks" when there's a set of Walker Steelbilt double-arm cantilever Shock Absorbers on your Ford. All roads are good roads then.

Walker Steelbilt Shock Absorbers—*are steel built—steel throughout.* Dependable. Unbreakable. Strong enough to stop the vibration of bumps, and to stand the strain while *doing it.* Built on new improved principle and built *better.* No frail parts. No cumbersome malleable pieces. Tough—trim—trustworthy. Extra long, remarkably resilient oil-tempered springs—stretch with slightest sway—then swing easily back into place.

Cold rolled hardened steel spring bolts—fitted with automatic oilers. Quick—lively, unimpeded action in *both* coils and leaf springs. No sliding parts. Least friction. Longest wear. Fully guaranteed.

*Money-saving price—only \$7.50 per set of four.* Save cost many times by *saving* the car. Complete. Ready for instant installation. No holes to bore.\* No bother at all. A sensational seller. Big Dollar-Getting Proposition for Dealers. WRITE FOR IT.

**WALKER MFG. COMPANY**  
33 Hamilton Street Racine, Wisconsin

## WALKER STEELBILT SHOCK ABSORBERS FOR FORDS



### WALKER AUXILIARY RADIUS RODS FOR FORDS

**PATENTED** Big Trade Getter for dealers. Great demand. Splendid profit. Be sure to *get* Walker Patented Rods. Don't buy infringements. Stocked by most jobbers. Walker rods reinforce the regular Ford Radius Rod. Help brace front axle—keep it straight—prevent bending or breakage of regular rod. Attached without drilling holes. Clamp on to rear of regular rod—fasten to axle—using regular Ford perch bolt except 701, which clamps to front axle. **PATENTED**



No. 701—Made of solid  $\frac{3}{4}$ -inch steel rods. Malleable clamps. Weight, 12 lbs.



No. 702—Made of 1-in. x 1-in. x  $\frac{3}{16}$ -in. angle iron. Weight, 8 lbs.



No. 703—Made of 1-in. x 1-in. x  $\frac{3}{16}$ -in. angle iron. Jointed arms. Weight, 5 lbs.

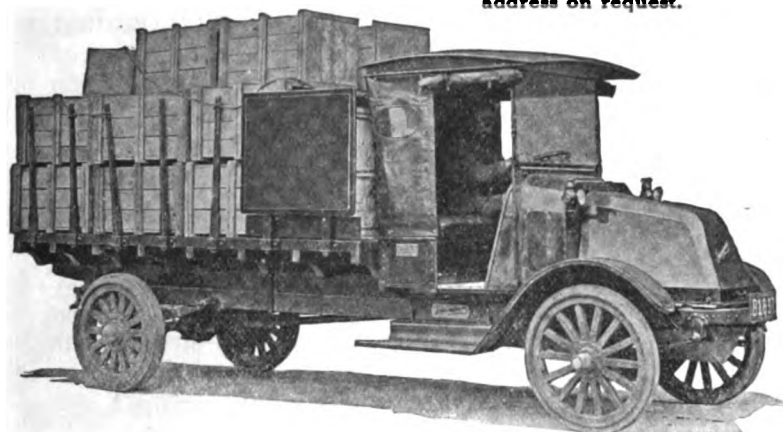


No. 704—Made of  $\frac{3}{4}$ -in. tubing. Malleable threaded clamp. Weight, 5 lbs.

## Photographs of 400 International Motor Trucks

**T**HESE are times when the common-sense design and enduring construction in International Motor Trucks are taking advantage of a real opportunity to prove their worth. With the transportation and hauling facilities of the nation under a continual strain, motor trucks are being made to suffer hard treatment, to give service or to fall down under the most trying conditions, to deliver mileage and yet keep hauling costs down.

If you will inquire, you will find that the Internationals in your section are pleasing owners with their performance, working economically and reliably. That is the habit of the many thousands of Internationals in every section. We have ready an attractive 144-page book containing nearly 400 illustrations made from photographs showing Internationals in service in almost every conceivable line of business and with suitable bodies for all hauling requirements. It contains also illustrated descriptions of the various models, and lists the 90 branch houses through which we effect convenient distribution and which help us to give service to dealer and owner. This book will be sent to your address on request.



International Motor Trucks will positively fill the bill for any firm. They are made in 1500, 2000, 3000 and 4000-pound capacity sizes. Prices range from \$1550 to \$2650 for the chassis (cash f. o. b. factory).

International popularity grows fast. Write us—open territory is rapidly being taken by dealers who realize the present and future value of an International Motor Truck contract.

**International Harvester  
Company of America**  
(Incorporated)

155 Harvester Bldg., Chicago, U S A

## A DEALER PROPOSITION THAT WON'T WAIT

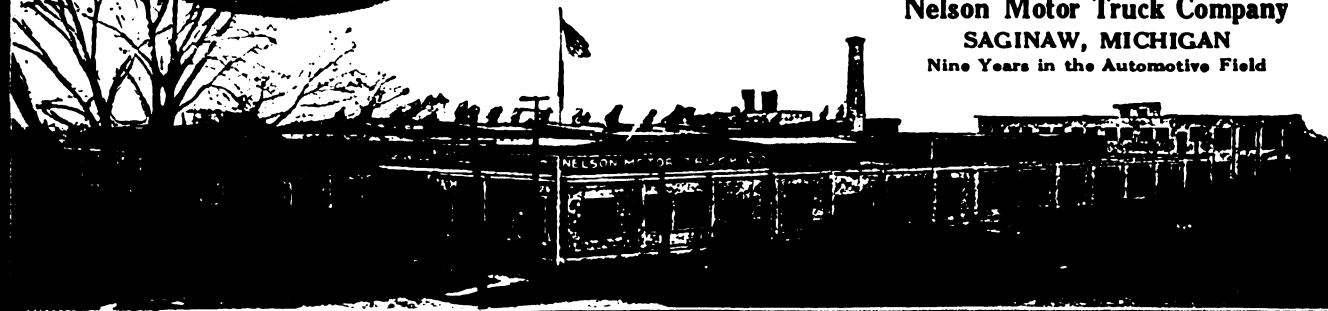
This is an immediate opportunity for substantial dealers to secure the agency for a truck that meets 95% of all haulage needs.

# JUMBO

## 2½ TON INTERNAL GEAR MOTOR TRUCKS

Built of standard units: Buda motor, Clark axle, Fuller transmission, Timken and Hyatt bearings, Detroit springs. Prompt deliveries. Twelve months' guarantee. Priced at \$2,250, but holding the real profit a dealer needs to warrant aggressive selling effort. Real selling co-operation extended right kind of dealers. Don't wait. Write or wire now.

**Nelson Motor Truck Company**  
SAGINAW, MICHIGAN  
Nine Years in the Automotive Field



# Improved Features of untold advantage

And without these superior NEW constructional features a truck could not give BEST results. That is why the Armleder Motor Truck in connection with practically all other makes was the one selected by Commercial Institutions having the highest requirements.

## ARMLEDER MOTOR TRUCKS

SPRINGS Armleder Patented. Guaranteed not to break or creep. Mounted without shackles or shackle bolts—eliminating numerous wearing parts. WHEELS that are too strong to break down. RADIUS RODS constructed to hold the rear axle in place and keep the front and rear wheels in perfect alignment; thereby removing the greatest cause of Universal Joint trouble.

FRAME that will not break or sheer out of square.

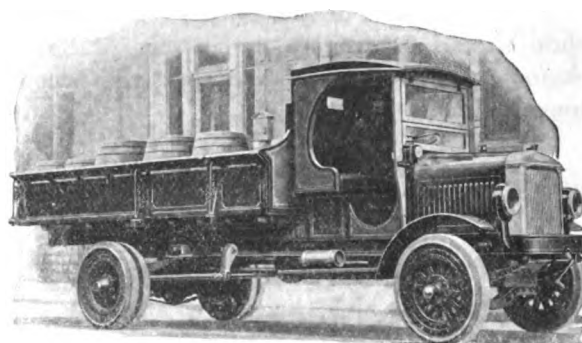
RADIATOR mounted on shock absorbing springs. Never leaks.

*Those dealers who can qualify up to our standard are invited to write for territory.*

**THE O. ARMLEDER CO.**

Dept. B. 4

CINCINNATI, U. S. A.



## THE SECRET IS OUT

And Now A MILLION PEOPLE Know

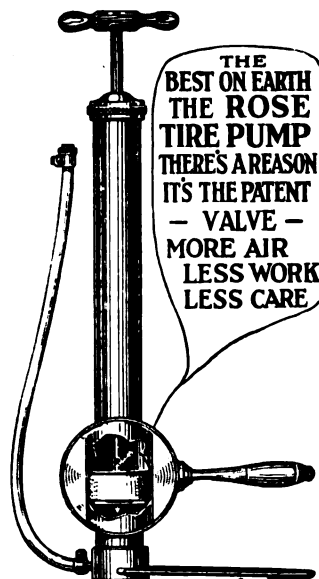
## A PERFECT TIRE PUMP

This Secret Is

## THE PATENTED VALVE

# The ROSE

TIRE  
PUMP  
PERFECTION



THE  
BEST ON EARTH  
THE ROSE  
TIRE PUMP  
THERE'S A REASON  
IT'S THE PATENT  
— VALVE —  
MORE AIR  
LESS WORK  
LESS CARE

# The ROSE

YOUR  
NEXT  
PUMP

**J. H. HANEY & CO.**  
Rose Tire Pumps

**Manufacturers**  
Rose Grease Guns

**HASTINGS, NEBRASKA**  
Rose Fan Belts

# S P E E R

*The Brush With*

## A REPUTATION

A brush, properly applied, for every starting and lighting system known to the automobile industry.

Every car owner realizes the service rendered by the lighting generator and starting motor. Speer Automobile Brushes make that service reliable.

Every jobber, dealer, garage and repair shop should investigate the quality of Speer Automobile Brushes. Car owners will accept no substitutes.

Write for Latest Catalogs.

**Speer Carbon Company**  
St. Marys, Pa.



More  
Power

More  
Wear

## GEISEL'S PERFECTION ENDLESS WEB BELTS

(Patented 1903 and 1918)

Because of the unquestioned superiority of fabric over leather for fan and generator belts, dealers find fabric belts in steady demand.

The best, though not the most expensive fabric belt, is Geisel's Perfection Endless Web Belt. It grips the pulleys like a Bull Dog—without slip, with minimum loss of power. It wears indefinitely; does not stretch and remains pliable and absolutely noiseless.

Geisel's Perfection Endless Web Belt is made of tough, unyielding, unstretchable fabric treated with a secret rubberizing process, giving it maximum grip and wear. The joint is spliced, sewed, rubberized, vulcanized and pressed.

The joint is no thicker than the rest of the belt—but as strong as any part of the fabric.

Dealers who aim at reselling customers will sell Geisel's Perfection Web Belts in preference to others.

**OTTO E. GEISEL**

3202 Oxford Street

Philadelphia, Pa.

We also make

friction rings



# I EARNED \$220000 IN FOUR MONTHS

## THIS IS RICHARD A. OLDHAM

Mr. Oldham was telegraph operator for the Illinois Central Railroad for twenty years. He is fifty-eight years old. During all those twenty years he drew the customary monthly salary of a telegraph operator—no more—no less. One day he read one of my advertisements and the possibilities of making money in the Auto-Tire Repair Business. In a few weeks he had purchased and installed a Haywood outfit, and was doing business for himself. He was His Own Boss. A short time ago he wrote us that his income in four months was as much as it had been in Two and One-Half years as Telegraph Operator. You men who have been left at home—who are beyond the draft age—can and must take up the burdens left behind by others. Oldham is a living example of what can be done. I have 500 places to be filled now. 500 stations where tire repairing is neglected, because there is no one to do it.

**I Must Have 500 Men** to fill these places within the next 60 days

I have a big interesting book to send you—a book about tires—it explains this business—gives inside figures and profit. Gives actual proof of success—letters of others who are now operating Haywood Shops and making big money. What these men have done you can do. \$2500 to \$4000 a year is conservative. One machine will give you a start. You can see all business around you—everywhere there are automobiles there are tires that need repairing. You know that. All you do is open a shop—put out a Haywood sign and auto owners will come to you, welcome you and the service you bring them.

Sign the coupon and mail it today, or send a post card or letter.

M. HAYWOOD, Pres

**HAYWOOD TIRE & EQUIPMENT CO.**  
1146 Capitol Avenue, INDIANAPOLIS, IND.



M. HAYWOOD, Pres.  
Haywood Tire & Equipment Co.,  
1146 Capitol Ave., Indianapolis,  
Ind.

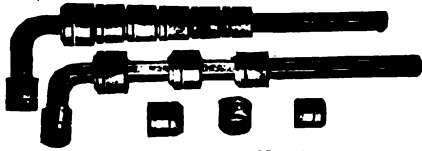
Dear Sir—Please send me your book on Haywood Tire Repair Plants and full particulars on your National Tire Repair Service and details of your FREE school of tire repairing.

Name.....

Address.....



*"Break Any Sedgley Wrench and  
We Repair It—No Charge"*



Hexall Socket Wrench No. 5.

**Make  
Friends**

Sell a wrench that  
gives satisfaction  
—avoid apologies.

## HEXALL Wrenches



Hexall Ratchet Socket Wrench No. 1.

Made of first quality solid bar steel, socket holes automatically machined out, broached and case hardened.

They are thus practically unbreakable and stand wear indefinitely. *We guarantee them.*

Five outfits—five sizes.

Ask your Jobber.

**R. F. SEDGLEY, Manufacturer**

2311-13 North 16th Street Philadelphia, Pa.

Also manufacturers of Baby Hammerless Revolver.

Pacific Coast Representatives: McDonald & Linforth, 739 Call Bldg., San Francisco, Cal.

## SPECIAL NOTICE TO THE TRADE

THE LIST PRICE

of

**Thomas Timer  
Elevator**

for

**Ford Cars**

List  
now  
\$5  
After  
Oct. 15  
\$6.50



is \$5; after Oct. 15,  
\$6.50.

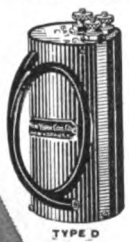
Same discount will be allowed on any and all orders placed before Oct. 15 and will be filled at \$5 list, less our regular discount.

This holds good for 30-day future delivery after Oct. 15, provided the order is placed before this date.

Mfd. by

**THOMAS-ANDREWS CORPORATION**  
WAUKEGAN, ILL.

## NEW YORK REPLACEMENT COILS AND RESISTANCE UNITS



TYPE D

**Service Stations  
AND  
Garage Men**

everywhere are buying our Spark Coils and Resistance Units for replacement on all battery ignition equipped cars.



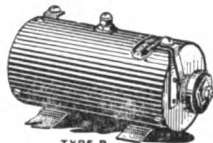
TYPE A



TYPE C



STYLE A



TYPE B



TYPE F

Western Distributor:  
Ray-Heath Co., 1440 Michigan Ave., Chicago, Ill.

**NEW YORK COIL COMPANY**  
338 PEARL ST. NEW YORK CITY

## All-Season Tops

No equipment line is superior to the Detroit All-Season Weatherproof Tops as a money maker for Dealers.

They sell day in and day out, the year 'round. Right now the demand is abnormal. Seems as if every new and old car owner is in the market for a weatherproof all-season top.

For  
**FORD  
HUDSON  
OVERLAND  
CHANDLER**  
Cars

**DETROIT**  
DETACHABLE  
WEATHERPROOF  
TOP

For  
**BUICK  
CHALMERS  
CHEVROLET  
MAXWELL**  
Cars

The reasons are obvious. Motorists by the hundreds of thousands are practically forced to retain their old models, due to the war production curtailment in new passenger cars, and, in a vast majority of cases, a new top for their old cars is imperatively necessary.

Then, new car owners are more than ever appreciating the superior construction advantages, personal comfort features, and health protection qualities of Detroit Weatherproof All-Season Tops.

If you are not already handling the Detroit Top line—you should secure the agency for your territory immediately. They are the tops your customers want and profit returns are large. Write us today.

**Detroit Weatherproof Body Co.**

110 Saginaw St.

Pontiac, Michigan, U. S. A.



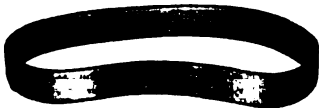
The Quality Mark of Good  
**LEATHER**

THE HLB mark is your assurance that the goods are the best at the price. HLB leather goods are not being cut in quality to meet the acute leather situation. Quality is being upheld—that HLB jobbers and dealers may retain the faith that customers have in them.



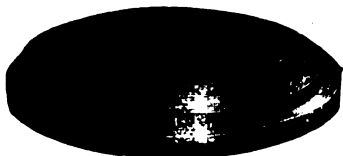
**Fan Belting**

VEE SOL BELTING is a "V" shaped solid leather belt designed for "V" pulleys. Made in any thickness, carefully and solidly cemented, and either braided or sewed thru with heavy linen thread. Guaranteed not to crack. 25, 50 and 100 ft. spools, in  $\frac{1}{2}$  in.,  $\frac{3}{4}$  in. and  $\frac{1}{4}$  in.



**Flat Fan Belting**

WETPRUFE Ford Fan Belts are made in same high quality as Wetprufe Flat Belting; laps are carefully cemented, and stitched with heavily waxed linen thread—a perfect joint. This is the best Ford belt on the market. A quick seller that creates and holds customers. Made endless, with quick attachable, or clipper, fasteners.



**Flat Fan Belting**

WETPRUFE Flat Fan Belting is the finest quality obtainable anywhere, at any price. It is made of carefully selected, specially tanned belting leather, and is guaranteed waterproof, oilproof and heatproof. Furthermore, it is practically stretchless. A comparison with other flat beltings will quickly convince you of its superiority, in every way.

**HIDE, LEATHER & BELTING CO.**

219 S. Meridian St. Indianapolis, U. S. A.

**Manufacturers Requiring  
Agents in Great Britain  
and Ireland**

Are respectfully requested to send current quotations and supplies of catalogues for distribution.

**Buying Agencies Required**

References: Royal Bank of Ireland, Ltd., Dublin

**SPECIALTIES**

Hardware, Tools, Agricultural and  
Other Machinery. Motor Cars.  
Outboard Engines. Tractors

**The European Bureau of American  
Manufacturers**

*The European Headquarters for American  
Novelties, Specialties and Staple Articles*

42 Westland Row

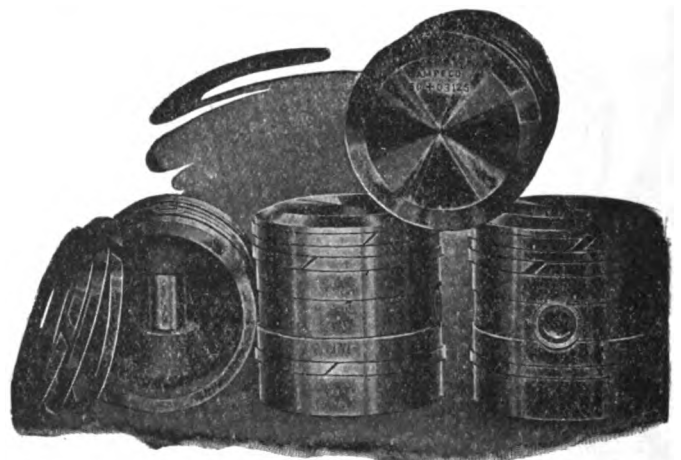
Dublin, Ireland

And at London, Liverpool, Manchester, Paris

Telegraphic Address:  
"Byrne 2311, Dublin"

Codes:  
Western Union. A.B.C. 5th Edition. Lieber's

**Fords Converted Into Trucks and Tractors  
Can Now Use  
"AMPECO" PISTONS**



**FOR EVERY FORD CAR IN SERVICE**

Better running trucks and tractors that pay, smoother running passenger cars that skid along easily under every load, inevitably follow when you install "AMPECO" light weight, evenly balanced pistons in your Ford. Overcome main bearing troubles, give increased power and greater speed. Found always in the most efficient motors on Ford cars.

Use "AMPECO" Pistons and You Use The Best

**AMERICAN MACHINE PRODUCTS CO.**  
MARSHALLTOWN IOWA

Exclusive Sales Agents—Fulton Sales Company, Suite 1100, 910 South Michigan Blvd., Chicago, Illinois

## TENAX Compressed ASBESTOS

### Sheet Packing Gaskets



Sheet Packing

A standard line of Asbestos Products—made right and priced right for the automotive jobber and dealer trade. Good discounts.

Tenax Compressed Asbestos Sheet Packing furnished in sheets 50"x50". Special size 50"x150".

Thicknesses of 1/32" to 1/4" inclusive.

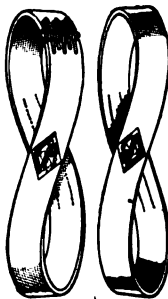
Perfect gasket sheet stands temperature of 1200 degrees Fahr.

Tenax Gaskets make tight joints. Won't blow, burn or squeeze out. Extremely light weight.

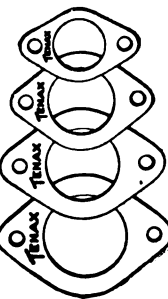
Brakebestos—a perfect asbestos wire inserted lining for truck and tractor friction brakes, clutches, etc. Heat, oil and water proof.

Vulcan Fan Belts are non-slipping, long life type and can be furnished in either endless or detachable style.

Send for liberal sales proposition.



Vulcan Fan Belts



Gaskets



Brakebestos

## ADVANCE PACKING & SUPPLY COMPANY

Tractor Dept. 13-15 N. FRANKLIN ST., CHICAGO, U. S. A.

# BRUNNER

## AUTOMATIC GARAGE AIR COMPRESSORS



are conserving labor for the Brunnerwise garage men because they automatically maintain a proper working air pressure at all times and require no attention aside from an occasional lubrication.

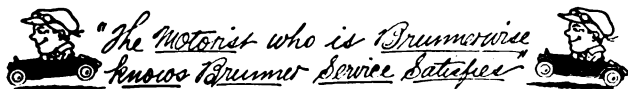
Just now when labor is so scarce the conservation of labor is a vital necessity and the Brunner Automatic Air Compressor is playing a big part in the economical administration of the garage business.

### BRUNNERIZE YOUR GARAGE

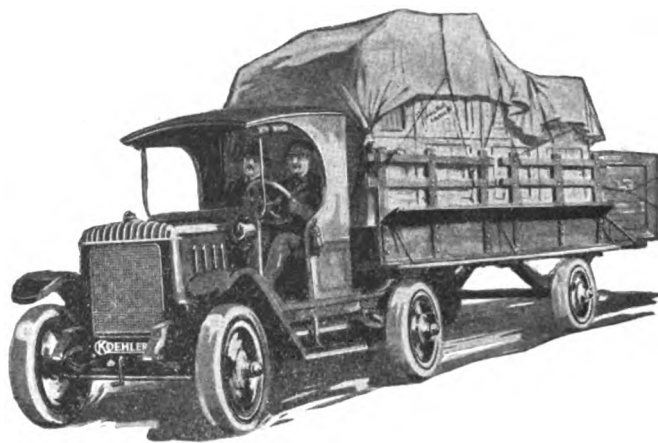
Write for No. 15 Catalogue and the name of the Brunner Jobber covering your town.

**BRUNNER MANUFACTURING CO.**

Utica, N. Y.



*"The Motorist who is Brunnerwise knows Brunner Service Satisfies"*



# KOEHLER

## Trucks and Tractors

The Koehler Truck is dependable for any business, anywhere.

Koehlers prove themselves to users with faithful and mighty service. Day in and day out they draw the heaviest loads over steep hills, on long hauls—quickly, smoothly, efficiently, at minimum operating expense.

Major specifications of Koehler Trucks include exclusive Koehler Motor that transmits maximum power to the rear wheels, where it belongs; Torbensen Internal Gear Drive Rear Axle, Eisemann High Tension Ignition, Stromberg Carburetor, Selective Sliding Transmission and Multiple Disc Clutch, Koehler Finhead Radiator, long wide springs, Wayne Artillery Type Wheels, and generous tire equipment.

Koehler Trucks are low-priced and efficient. They satisfy every varied requirement. Their upkeep expense is small.

### Write for Special Koehler Truck Literature

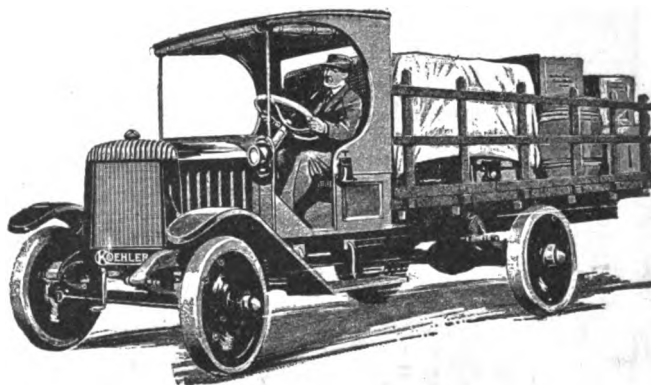
Model "K"	Model "L"	Model "KT"	Model "LT"
1 1/4 to 1 1/2 Ton Truck	2 1/4 to 3 Ton Truck	3 Ton Tractor Subject to Trailer Overload	5 Ton Tractor Subject to Trailer Overload
Price, \$1,450	Price, \$1,985	Price, \$1,750	Price, \$2,165

Dealers: Koehler Trucks make your selling energy fully worth while. More than liberal profits, generous territory, genuine protection, thoroughly satisfied customers. Write today for full particulars.

## H. J. KOEHLER MOTORS CORPORATION

150 Ogden Street,

Newark, New Jersey





## Ohio Karbon Killer

Keeps Spark Plugs, Valves, Pistons and Cylinders free from carbon—all the time.

Don't let your engine choke up with carbon until it can't run, and then remove it—Prevent it!

Put Ohio Karbon Killer in your gasoline, and prevent the formation of carbon, thus keeping your engine in the very best condition at all times.

Costs \$1.00 per lb., and a pound treats 480 gallons of gas. Get a can right now, and give your engine a chance. If your dealer cannot supply you, send your dollar to

**THE OHIO GREASE COMPANY**  
Box 122, LOUDONVILLE, OHIO

## just a plain story on dealers' profits

If you cannot get cars to sell, make profits pushing good live accessories. Put in a stock of

## WORKRITE Hydrometer Outfits

This Outfit is advertised extensively, and dealers everywhere are selling large quantities of them. Use them in your garage and sell them to your trade. They are easily sold because it is an article the people really need. Just give them a trial and see for yourself. Write today to your jobber or us for discounts.

**Workrite Hydrometer Outfits**  
List, \$1.50

**The Workrite Mfg. Co.**  
5630 Euclid Ave., Cleveland, O.



20  
30  
40  
50

# Air is Life!

Insufficiently inflated tires means excessively inflated tire bills. Keeping your air pressure up means keeping your tire expense down.

Test your air pressure daily with a

## Twitchell Air Gauge

and give your tires new air whenever they need it.

New Air Is Cheaper Than New Tires

At your dealer, or

**The Twitchell Gauge Co.**  
1516 South Wabash Avenue, Chicago  
Price \$1.50





# Commerce

1 Ton Trucks

## A Year Ahead of Other Trucks

The only truck having everything necessary on it—when you buy it

Three types of bodies for all models—Bijur Starting and Lighting, with Diode Magneto Ignition—Stewart Vacuum System—Pierce Governor—Windshield—Bumper.

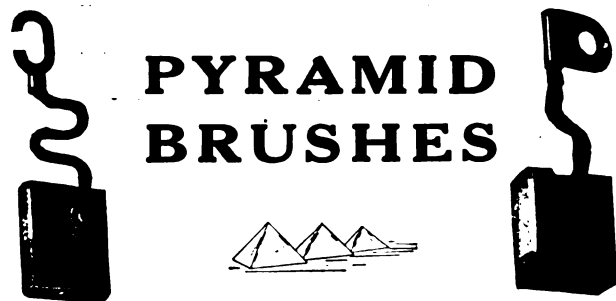
Continental Motor (8 1/2 x 6)—Torbensen Rear Axle—Detroit Steel Products Company Springs.

One-Ton Chassis .....	\$1450.00
With Express Body .....	1515.00
" Flat Top and Storm Curtains .....	1550.00
" Standard Stake Body .....	1605.00
" Truck Including 3-Ton Trailer .....	2855.00

**The Commerce Motor Car Company**  
DETROIT MICHIGAN

W. H. Brinkerhoff, Eastern Dist. Mgr.  
Belmont Ave., Elmhurst, Long Island, N. Y.





## PYRAMID BRUSHES

### FOR AUTOMOBILE

### Starting and Lighting Equipment

"There's the Three Pyramid trade mark! Now I know it's the correct brush," says the auto owner. "My storage battery will stay charged now."

Pyramid Brushes are standard and are backed by over a quarter century's experience in brush manufacture.

Send today for our Brush Specification Booklet.

**NATIONAL CARBON COMPANY, Inc.**  
CLEVELAND, OHIO

## Sell F-F Battery Boosters

*For home charging of Storage Batteries*

**They will interest your prospects.**

**They will charge a battery as it should be charged at a cost of about 6 cents per charge.**

**Every car owner a prospect.**

## F-F BATTERY BOOSTER

There is no wiring to do—just connect the battery with the outfit and put the plug in any electric socket. It takes care of the charging itself.

Get some of our booklets, "Home Storage Battery Charging," and introduce the F-F Battery Charging Outfit to your customers.

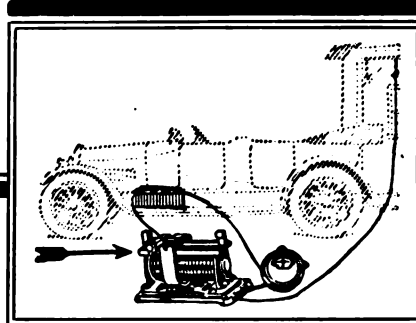
Write for further information, discounts, etc.

Ask for Bulletin No. 13.

**The France Mfg. Co.**

Cleveland

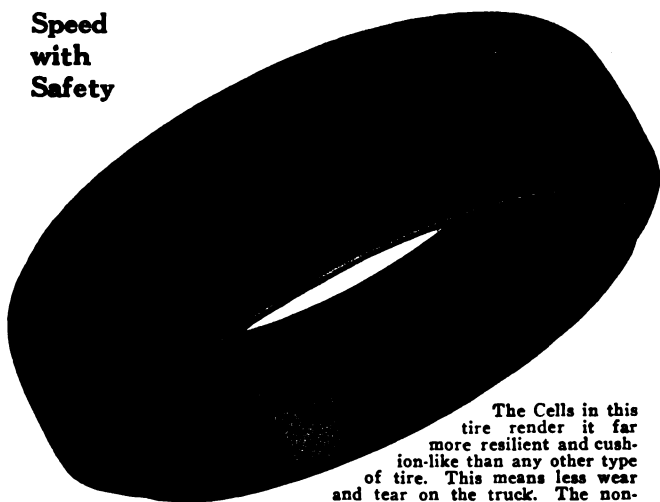
Ohio



## The Real NON-SKID Truck Tire

That the Swinehart Ideal Cellular Tire is NON-SKID on wet pavements has been proven times without number. Does this mean anything to you?

**Speed  
with  
Safety**

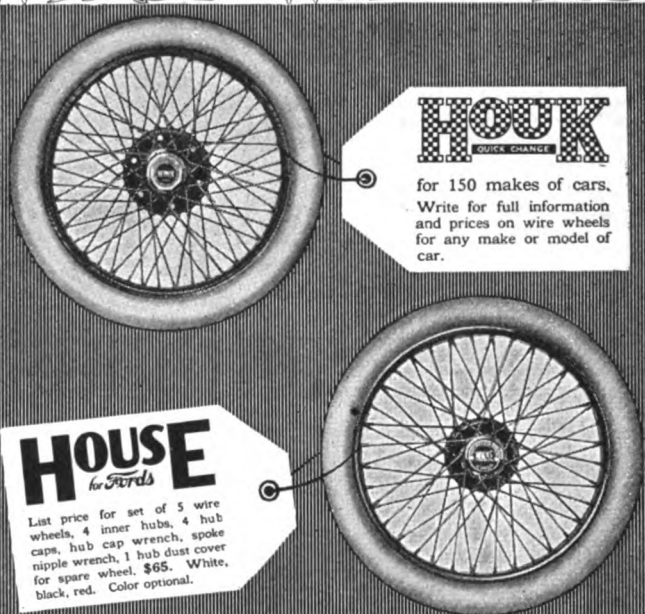


The Cells in this tire render it far more resilient and cushion-like than any other type of tire. This means less wear and tear on the truck. The non-skid properties mean no danger from skidding accidents. The extra thickness of rubber in this Ideal type means longer life and less tire expense.

*Our catalog or salesman can give more details*

**THE SWINEHART TIRE & RUBBER CO.**  
AKRON, OHIO

## WIRE WHEELS



**HOOK**  
QUICK CHANGE

for 150 makes of cars.  
Write for full information  
and prices on wire wheels  
for any make or model of  
car.

**HOUSE**  
for Fords

List price for set of 5 wire  
wheels, 4 inner hubs, 4 hub  
caps, hub cap wrench, spoke  
nipple wrench, 1 hub dust cover  
for spare wheel. \$65. White,  
black, red. Color optional.

**Dealers!** Wire Wheels are *sellors*! Get particulars of wire wheel service and sales agent's propositions.  
Ford distributors and accessory dealers should write for service and sales proposition for HOUSE Wire Wheels for Ford cars.

WIRE WHEEL CORPORATION OF AMERICA  
(Successors to Hook Mfg. Co.)  
835 Eleventh Ave., at 57th St., New York

Exclusive Canadian Representatives:  
DUNLOP TIRE & RUBBER GOODS CO., Toronto

# COLLIER TRUCKS

Every part and feature of construction has been coordinated to the single purpose of making this truck a rapid and efficient worker with a wide range of adaptability. It is perfectly suited to the hurry up Special Delivery or the transportation of good sized load with extraordinary dispatch.

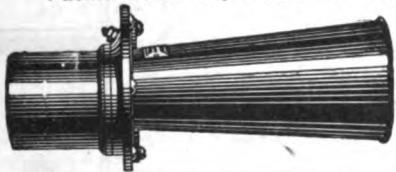
The Collier Motor Truck Co.  
Bellevue, Ohio

**1 1/4 TON**  
**SPEED TRUCK**  
on  
Pneumatic  
Tires

## SPARTON PRODUCTS

**First Choice of  
America's Best Cars**

Sparton Motorhorns—hand-operated and motor-driven.  
Sparton Gasoline Vacuum System.  
Sparton Honeycomb Radiators and Sparton Radiator Fans.  
The Sparks-Withington Co., Jackson, Mich., U. S. A.  
Pacific Coast Representative: Norman Cowan Co.,  
San Francisco, Cal.

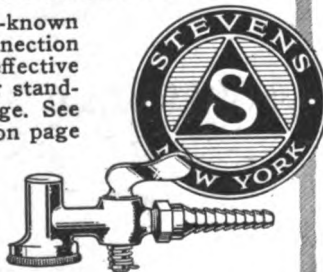


SAFETY  
FIRST  
SOUND  
SPARTON

## Stevens Acorn Aircock

This is the well-known Acorn Pump Connection combined with an effective air control valve. For standard or pencil type gauge. See complete description on page 29 of new Stevens Catalog 86-W—your "staple buying guide."

Stevens & Company  
375 Broadway, New York



STEVENS PRODUCTS

## ZENITH CARBURETOR

KNOWN the world over as the zenith of carburetor efficiency. A long list of American builders of cars, trucks and aeroplanes believe this simple, plain tube device to be the best insurance for permanent carburetor satisfaction.

**Zenith Carburetor Co.**  
New York Detroit, U. S. A. Chicago

The **LARGEST** Automobile Supply House in America

## The Great Big Free 1918 MILLER CATALOG



The Authoritative List of Automobile Accessories and Prices Issued by MILLER, the largest Automobile Accessory Jobber in America

Send for YOUR Copy now, Mr. Dealer

**CHAS. E. MILLER**

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New York City  
Boston, Mass.  
Philadelphia, Pa.

Buffalo, N. Y.  
Hartford, Conn.  
New Orleans, La.

Springfield, Mass.  
Cleveland, Ohio  
Brooklyn, N. Y.

Detroit, Mich.  
Atlanta, Ga.  
Newark, N. J.

## Gray-Hawley Muffler Cut-Out



"Puts Pep in Your Motor"  
Special FORD Outfit (Complete as shown) \$1.50  
" MAXWELL Outfit (Complete as shown) \$2.25  
" DODGE, STUDEBAKER, CHANDLER, etc., Outfit (2 Inch), complete as shown \$2.50

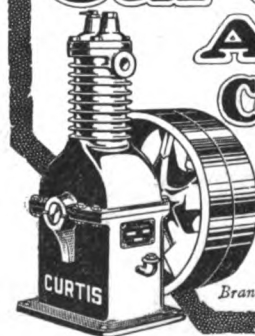
THIS CUT-OUT enables operator to properly "tune-up" his motor and also acts as a "Safety-Relief" by opening automatically whenever an explosion occurs in Muffler, thereby saving Muffler from severe strain and oftentimes bursting. Both CUT-OUT and PEDAL are easily attached, the Cut-out being simply clamped over a notch out in exhaust pipe and the Pedal slipped through a hole bored in floorboard. The CUT-OUT is made in sizes suitable for practically every car.

PEDAL also sold separately. Circular M-F with prices on request.  
GRAY MUFFLERS are used as standard equipment by over 80 of the leading Motor Car and Truck Manufacturers. Made in 5 models and 50 sizes. There's one for your car.

Special FORD MUFFLER, regular, \$2.50. SAME, with "built-in" Cut-out, \$3.25  
GRAY-HAWLEY MFG. CO., 937 Jefferson Ave., DETROIT, MICH., U.S.A.

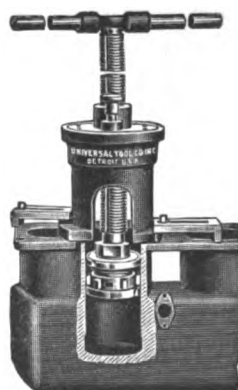
## Curtis Air Compressors

**FREE  
CURTIS-AIR  
FREE FROM OIL**



Install a Curtis and furnish your patrons with CURTIS AIR—FREE FROM OIL. The Curtis sign (free with each Curtis Compressor) inspires confidence and helps build your business. Ask your jobber or write us for full information.

Curtis Pneumatic Machinery Co.  
1546 Kienlen Ave., St. Louis, Mo.  
Branch Office—531-B Hudson Terminal, New York City



## The New Improved Universal Cylinder Reboring Tool

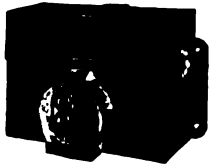
**Is Built to Guarantee  
Absolute Accuracy**

Designed to rebores practically all makes of automobile, tractor, stationary, marine or aeroplane—either open or closed end cylinders, and will rebores a true, round, straight bore. Cutters adjustable from 3/4 to 5/16 of an inch. For other new and important improvements—

Write for free illustrated literature with complete details, also give your jobber's name.

**THE UNIVERSAL TOOL  
COMPANY, Inc**

916 Beaubien St. DETROIT, MICH.



Sells for \$4.00. Worth the price of car.

## The Defender

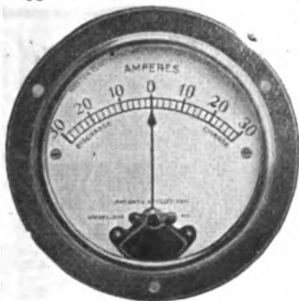
Is the "Standard" Ford Ignition Lock. Always demand the Defender and take no imitations. The Defender safely locks the coil box, and is the only lock that

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What if your electrical equipment should fail you on a black night, suddenly, without warning, on a bad part of the road? Don't let it happen! Put a



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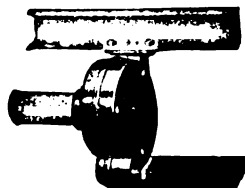


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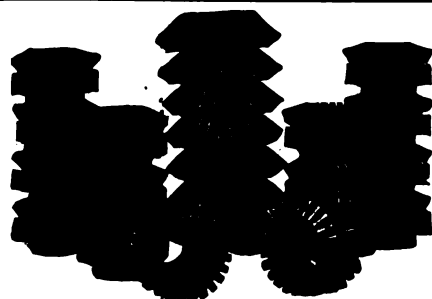
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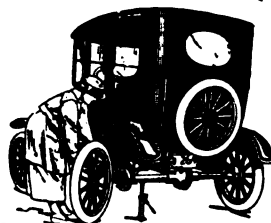
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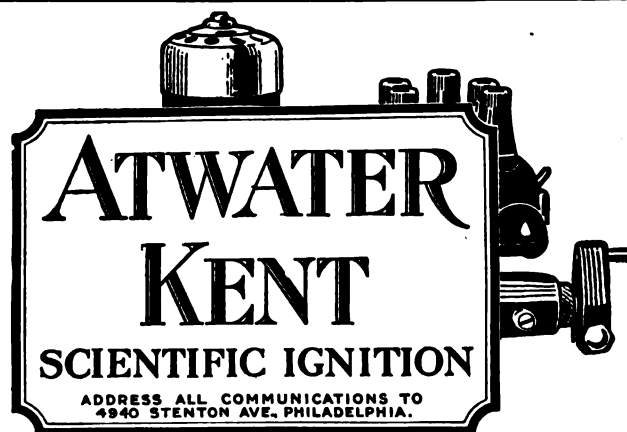
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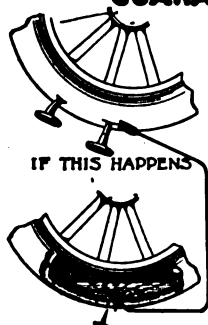
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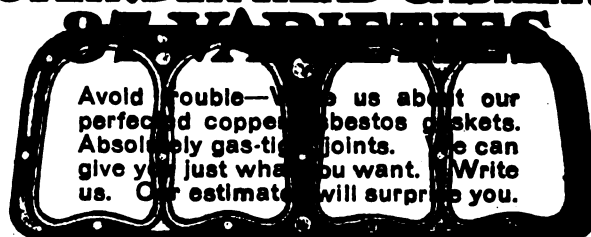
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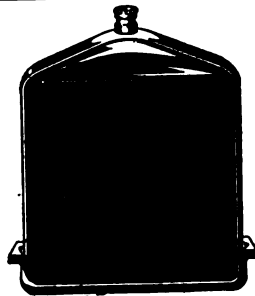
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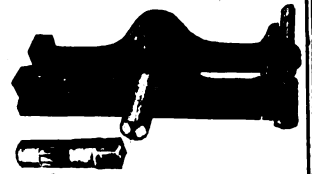
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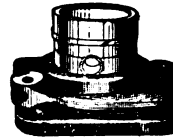
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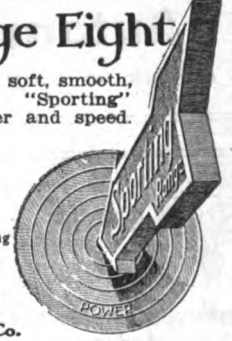
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A "Loafing" Range for ultra soft, smooth, economical operation — a "Sporting" Range for exceptional power and speed.



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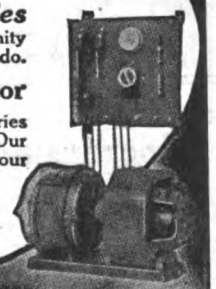
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For Removing Auto Wheel, Gears, etc.

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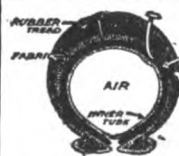


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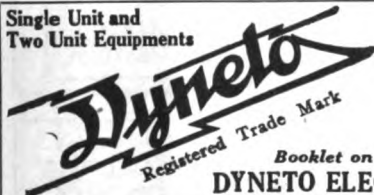
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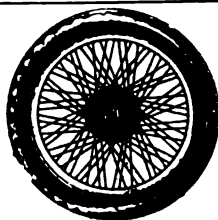
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MODEL "E" 5-Minute Vulcanizer repairs tube punctures. Price \$1.00 complete.  
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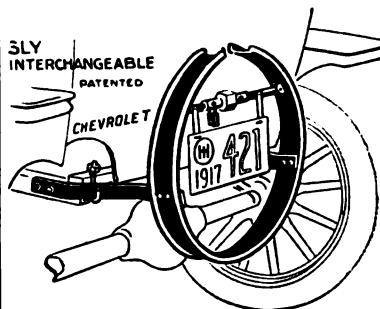
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Pasco Wire Wheels—mean strength, safety, economy and distinctive beauty.

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No. 10**

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32 x 3 1/2	6.50	35 x 4 1/2	8.00
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33 x 4	7.00	35 x 5	10.00
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32 x 3 1/2	5.50	35 x 4 1/2	8.50
34 x 3 1/2	6.00	36 x 4 1/2	8.75
31 x 4	6.25	37 x 4 1/2	9.25
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Infringement Opinions

J. STUART FREEMAN, Pat. Atty.

(Assn. Mem. Amer. Inst. Elect. Eng.—Mem.

Franklin Inst.)  
40 South 15th St., Philadelphia, Penn.

## C. L. PARKER

Formerly Member Examining Corps, United States Patent Office.

ATTORNEY-AT-LAW AND SOLICITOR OF PATENTS.

American and foreign Patents secured. Searches made to determine patentability and validity. Patent suits conducted. Pamphlet of instructions sent upon request.

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A small garage and repair shop in  
Eastern Montana. If interested, write

Box 315, Terry, Mont.

## Garage and Car Sales Business for Sale in California town

well equipped shops with sufficient business to employ from ten to fifteen men. Good location and good territory. own building and have several valuable car agencies. Will require about \$30,000 cash. Address Box A-712, care MOTOR WORLD.

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Complete Line  
**New and Second  
Hand Machinery**

Carried in Stock

*Garage Equipment a Specialty  
Carbon and High Speed Drills  
U.S. and mm. sizes*

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Machinery and Mill Supplies

YORK, PA.

"We buy and sell" Machinery

ESTABLISHED 1876

WAREHOUSE & SIDINGS: 942 BEACH

## FRANK TOOMEY, Inc.

Iron and Wood Working Machinery, Steam  
and Electrical Equipment and Supplies.

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Lathes  
Drills  
Shapers  
Planers

Gear Cutters  
Air Compressors  
Motors—all sizes.  
Arbor Presses  
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We make a specialty of, and have the  
largest stock of SECOND HAND electric  
MOTORS and GENERATORS in America,  
and buy and sell, rent, exchange and repair  
electrical machinery of all kinds.

**GREGORY ELECTRIC COMPANY**  
16th and Lincoln Streets CHICAGO

**Why Don't You Sell?**

Yes you have all kinds of odds and ends worth  
lots of money—tires, parts, accessories, machin-  
ery—all of which some other garage or repair-  
shop can use to advantage. Why don't you  
clear up and sell? The Clearing House of  
Motor World reaches the buyer.

**Lathes, Shapers, Drills and all  
Garage Machinery a specialty**

**THE OSBORNE & SEXTON MCHY. CO.**  
COLUMBUS, OHIO

## Do You Want a Good Lathe

or any other kind of used machinery? Tell us about your machinery wants.  
We'll find the man who has just what you need. Address Service Classified  
Department, Motor World.

**Manufacturers  
Jobbers  
Dealers**

**Are you in the market  
for live wire salesmen?**

Live wire salesmen are in daily touch with Motor World because it is the  
most powerful merchandising paper in the field.

Your advertisement in this section for the right man will bring results.  
Try it.

**MOTOR WORLD**  
Classified Advertising Department

## HELP AND SITUATIONS WANTED

# Skilled Automobile Machinists Wanted At Once

A builder of high class cars requires expert workmen in the following lines:

Potter & Johnson, J. & L. Operators, Lathe Hands, External and Internal Grinders, Gridley Operators, Drill Press and Milling Machine Hands, Tapping Machine and Radial Drill Hands, Valve Grinders, Aluminum Welders and Chassis Assembly Men.

Steady work guaranteed to good men. Best working and living conditions.

We cannot consider the application of men now engaged on war work. Apply immediately by letter. Address Box L323, care Motor World.

### Situations Wanted

Sales Expert—Desires position on a salary, commission and expenses basis. 5 years' experience at wholesale work in automobile and accessory business. Successful in placing agencies. Assistant salesman-ager for automobile house. College graduate. 25 years old. Exempt from draft. Address c/o P. O. Box 335, Montgomery, Ala.

### Attention— Position Seekers

Any man looking for a good connection in the motor car field should seriously consider giving this paper the opportunity to locate the desired job, especially at rates quoted, which are about one-half the classified rates. We will write your advertisement free of charge on receipt of full information as to your experience, age and any other information which will help us to make up for you an attractive advertisement. Situation expert, Classified Advertisement Department, MOTOR WORLD.

## Tool Room Foreman

We want a broad gauge tool room foreman who has had several years' experience; who knows how to lead men to their best work and speed; who can get results. We can not consider applicants now engaged on war contracts. Address

**Box G419, care of MOTOR WORLD**

When writing advertisers please mention Motor World—it identifies you

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One standard of living has been set. The soldier and the sailor have only the necessities of life. On this basis they are fighting with their full strength and with the spirit of Victory. Do we need hurries to help us fight at home?

The real truth of the matter is that in time of war you can't do as you like with your income. You receive it in trust, every dollar of it, subject to the superior War needs of the Government. What is necessary for your health and efficiency you must spend. The balance

belongs, until Victory is won, to the men at the front. You cannot fail in that trust. You must put your expenditure on a budget basis and save cheerfully, systematically, as a point of honor for the winning of the war.

Here is a plan which is followed by the head of one of the largest financial institutions in the country and by a great many business men who believe that saving is a practical business matter which must be attended to every day.

## Have a War Account

If you are earning enough to permit a surplus in the bank above immediate needs, open a WAR ACCOUNT in your check book. Whenever you receive your salary or income, meet current obligations, allow for a necessary working balance, then deduct from your regular account immediately as large an amount as you can and add it to your War Account, kept in parallel columns in your check book. Keeping your regular balance down to current needs prevents wasteful spending. Your War Account should be regarded as an account of honor, held in trust for the war uses of the Government and drawn upon only to meet taxes, payments on Liberty Bonds or War Savings Stamps.

If you have no bank account you can still go on a budget basis. It is not so much the amount you save as the

spirit behind it that counts for winning the war. Itemize your fixed weekly expenses, cut down on every item you can to the point where it honestly means something like war sacrifice. Invest your savings regularly in War Savings Stamps, or lay them aside in a savings bank for bonds of the Fourth Liberty Loan.

Only by consecrating ourselves to the saving of dollars, of labor and of materials can we save lives—the lives of our fighting men. We must save persistently, greatly, that our sacrifice may be added to their immeasurably greater sacrifice—for Victory.

And don't do it grudgingly, complainingly. Smile while you save—as they smile while they give, on the battlefields of France.



**Save Greatly! Save and Smile!**

**LIBERTY LOAN COMMITTEE**  
Second Federal Reserve District  
120 BROADWAY, NEW YORK CITY

*This is one of several advertisements contributed by*

**J. H. FAW, Inc.**



## EQUIPMENT FOR FORD CARS



## TIMER

The Timer has often been called the brains of the automobile, and in developing the Apco Timer we have had this thought constantly in mind, realizing the necessity of perfection in every detail. The Apco Timer gives a hotter, quicker spark, an easier start, more power and speed, smoother running, longer life to the platinum points, more miles to the gallon of gasoline, fewer short circuits and freedom from all those troubles that the regular type timer develops, besides being the only renewable timer on the market. The shell is heavy pressed steel with a single piece of steel advance arm riveted on. The contacts are clock spring steel, easily and cheaply replaceable, the insulation is high grade bone fibre. The roller is hardened steel, running on a hardened steel bushing between two hardened steel thrust washers in a die-casting, which practically eliminates wear.

### ONE DOLLAR LIST

*Sold by jobbers exclusively*

**Apco Manufacturing Company, Providence, U. S. A.**

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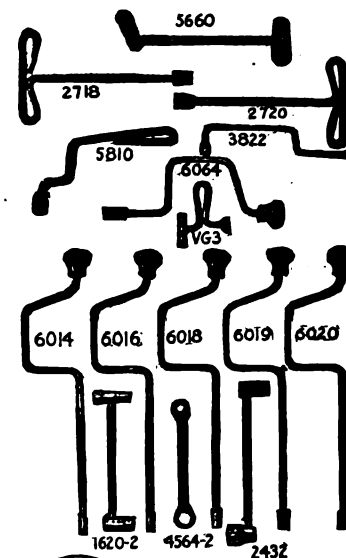
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## For Every Motor Necessity



### No. 30 Garage Service Set

illustrated is a combination that should be in every garage.

It will fit all popular makes of cars and will work wherever particular type wrenches are necessary.

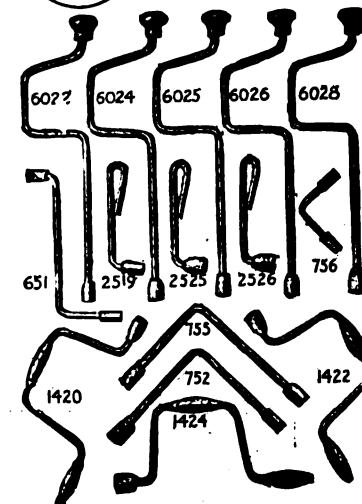
With the No. 30 Garage Service Set you will have every wrench you will need.

Your equipment will be standardized.

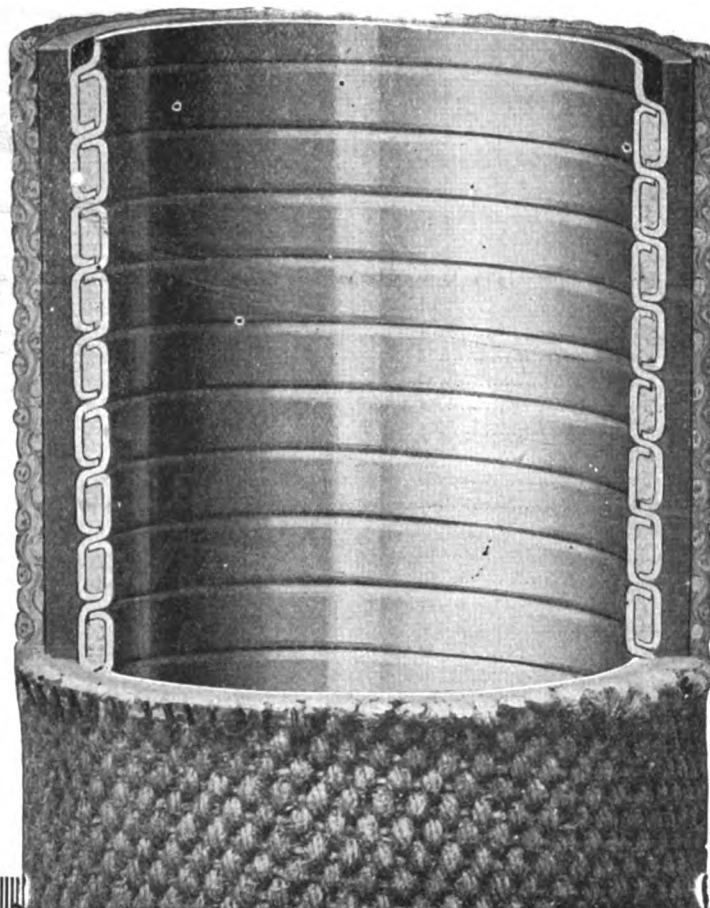
List Price \$20 (30 Tools)

Send for complete wrench catalogue No. 25.

### No. 30 GARAGE SERVICE SET



**WALDEN-WORCESTER,**  
 INCORPORATED  
 WORCESTER, MASS.



WHY don't you get a satisfactory gasoline hose, that won't leak and will last a while?  
You must be tired of unsatisfactory hose. Why don't you get

# TRIPLEXD

## THE GASOLINE HOSE

It's just what a hose for your use should be—a very flexible metal hose, with compressed rubber casing, held under great tensile pressure in a woven-on fabric cover.

Specify TRIPLEXD on your next order and in the meantime send for a circular.  
Address Dept. A-1.

METAL HOSE & TUBING CO.  
INCORPORATED  
RAYMOND & TILLARY STS.,  
BROOKLYN, N.Y.



# CHASE Plush MOTOR AND CARRIAGE Robes

*Made by Sanford Mills*

**Beautiful**—Robes of wonderful fast colorings and original, unique designs.

**Comfortable**—Shields one like the coat of fur given Arctic animals by Mother Nature.

**Durable**—Chase Plush Robes will outwear many times over—other woven fabric robes.

**Sanitary**—Not easily soiled—the hair being smooth does not attract or hold dust or germs. Clean—a simple shaking removes dust.

*The "Ad" girl is under an Exeter Plush Robe—pattern number 225*

ASK YOUR DEALER ABOUT "CHASE" ROBES  
WRITE US FOR PARTICULARS

**L. C. CHASE CO.**

NEW YORK

BOSTON

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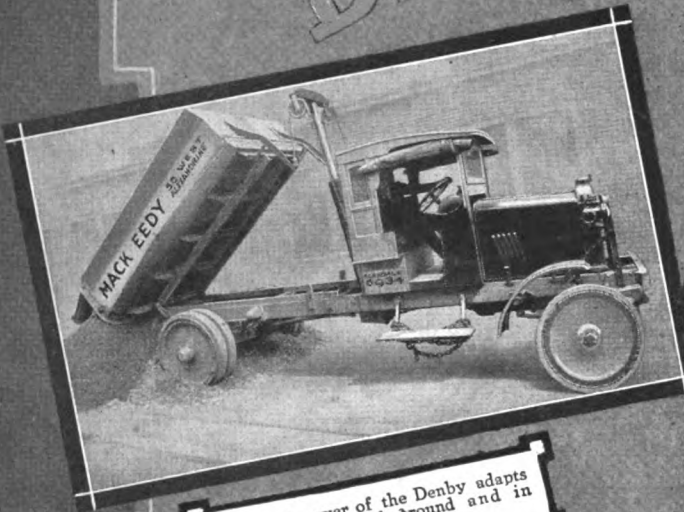
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*Leaders in Manufacturing Since 1847*

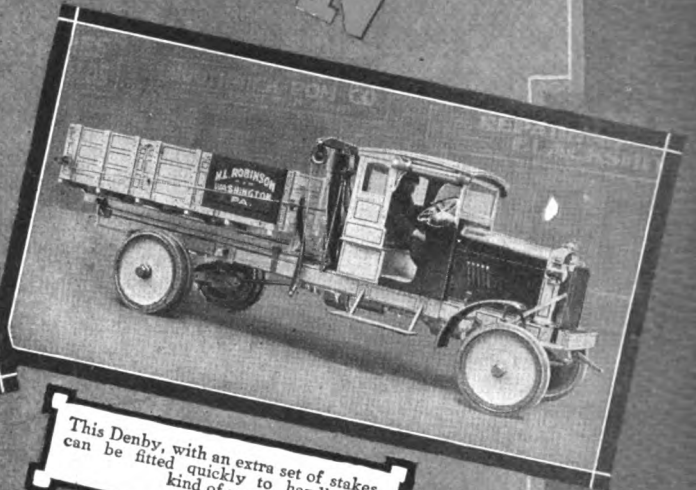


*Make a Warm Friend by Presenting a Chase Robe*

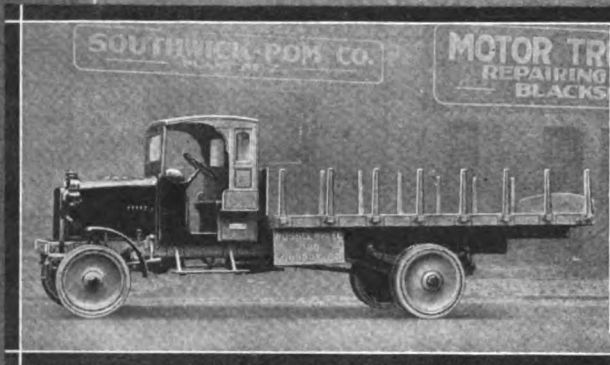
# DENBY 5 TON



The great power of the Denby adapts it to work over soft ground and in excavations.



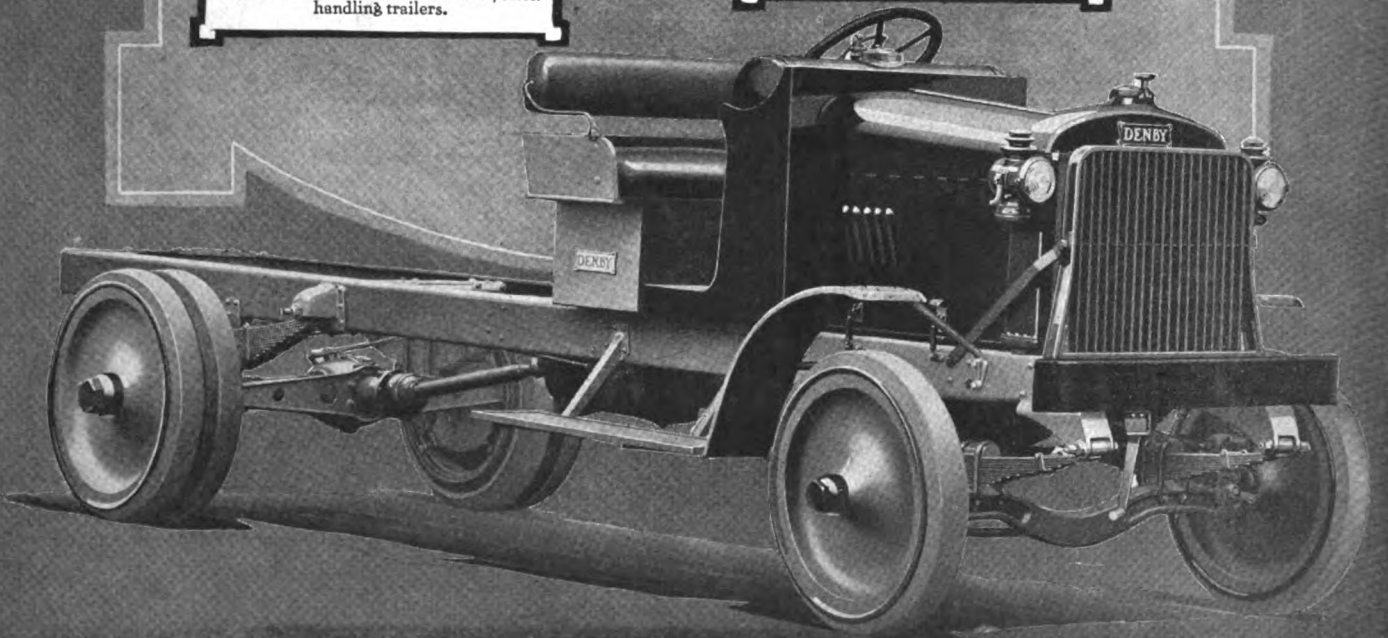
This Denby, with an extra set of stakes, can be fitted quickly to handle any kind of work.



This 5-tonner handles heavy castings and long lengths of structural steel, often handling trailers.



This Denby has the large load space and great power needed for inter-city express service.



**DENBY MOTOR TRUCK COMPANY, DETROIT, U. S. A.**













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